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CONDITIONING  
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the Industry

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NEWS

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## Inside Dope

By GEORGE  
F. TAUBENECK



Learn to live and laugh —  
thus delay your epitaph

**Story of the Week**  
**Air Conditioning Note**  
**All-Star Baseball Game**  
**Tomorrow (July 10)**  
**Hero Today, Gone**  
**Tomorrow**  
**The 1956 'Rabbit Ball'**  
**Private Joke for Ray**  
**Herrick of Tecumseh**  
**How Did We Get**  
**So Old So Quickly?**  
**Feminine Intuition**  
**Conversation Starters**  
**Berra at His Best**

### Story of the Week

If this legal action sticks, too many of us mere males will be homeless. A Detroit woman, who claims she is tired of discussing batting averages with her husband, has filed suit for separate maintenance in a Michigan Circuit Court.

Mrs. Mary Bonomo has complained that her husband, Anthony, is obsessed with baseball, etc. Her only recreation, she charged, was going to sporting events with him, and then waiting for an hour or so while he visited dressing rooms after the games.

Who said this is a man's world? And how much longer?

### Air Conditioning Note

The Cincinnati Reds air conditioned their dugout this year — first one in the major leagues.

The Cincinnati Reds are battling for the championship this year — first time in many years. Q.E.D.

### All-Star Baseball Game

Tomorrow (July 10)

That heartening news-item leads into another timely (we trust) collection of baseball anecdotes. Tomorrow (July 10) the voted best players from the National and American Leagues will vie for televised attention in the annual All-Star game. To whet your interest here are some all-star baseball stories. Sample:

First day that Ebbets Field was opened to the public (April, 1913) might have established Brooklyn's daffiness pattern for all time.

Not one official remembered to bring a key to open the park.

### Hero Today, Gone

Tomorrow

"In baseball, the difference between being a hero and a goat is often only a couple of inches," declared Grover Cleveland Alexander.

(Concluded on Page 7, Col. 1)

## Frigidaire Names Menge General Sales Manager

DAYTON — Appointment of C. H. Menge, executive vice president of the Eljer Co., Pittsburgh, as general sales manager of Frigidaire Div. of General Motors Corp., has been announced recently by Herman F. Lehman, general manager. In announcing the appointment, effective July 16, Lehman said Menge "brings a wealth of merchandising, marketing, and product development experience to his new position."

Menge has had direct responsibility for all operations and sales of Eljer, which is a subsidiary of the Murray Corp. of America. He has been asso-

### Lehman Is GM Vice President

NEW YORK CITY—Herman F. Lehman, recently appointed general manager of the Frigidaire Div., General Motors Corp., has been elected a vice president of the corporation.

Associated with the company for 31 years, Lehman succeeded Mason M. Roberts as general manager of Frigidaire on July 1. Roberts, a GM vice president, retired after 44 years of service.

ciated with Murray for 23 years.

Menge was born in Chicago in 1906 and was graduated from Illinois Institute of Technology in 1928. He worked as a merchandise development engineer with Sears Roebuck & Co. before joining the Murray Corp. in 1933.

With this experience he was selected to head a program to

(Concluded on Page 25, Col. 4)

## Year-Round Gas Turbine Steam Jet Home Unit Due

CHICAGO—Rheem Mfg. Co. officials here have made an announcement confirming some previous reports that the company has developed "a revolutionary jet gas-operated home air conditioning unit."

Richard S. Rheem, president of Rheem Industries, said that he has received word from his engineers that test models have surpassed expectations in performance and economy of operation.

However, officials would not confirm some reports that the new unit will make use of a "jet flow of steam" and a "gas turbine engine." However, they did say that the gas-operated unit will heat in winter and cool in summer, and that its "radical principles" are based upon Rheem patents and designs acquired recently when Rheem

(Concluded on Back Page, Col. 2)

## National-U. S. Buys Unarco's Cooling Div.

JOHNSTOWN, Pa.—National-U. S. Radiator Corp. here and Union Asbestos & Rubber Co. of Chicago announced jointly last week that an agreement had been signed transferring the Air Conditioning Div. of Union Asbestos & Rubber to National-U. S. Radiator.

In announcing the acquisition of Unarco's Air Conditioning Div., Theodore B. Focke, president of National-U. S. Radiator, stated that the move was a further step in the direction of broadening that company's activities in the fields of heating and summer cooling.

Edwin E. Hokin, president of Union Asbestos & Rubber, said he felt the sale would be equally beneficial to both National-U. S. Radiator and Unarco.

The principal acquisition in the transfer for National-U. S., is a manufacturing plant located in Greenville, Ill. It was stated by spokesmen for both companies that the majority of all personnel connected with the operation of the division were being transferred to National-U. S., with no change in duties.

National-U. S. Radiator came into existence on April 1, 1955, as a result of the merger of The

(Concluded on Page 4, Col. 5)

## Packaged Commercial Units Sharply Rise In N. Y. Area

NEW YORK CITY—Booming air conditioning sales here already find some distributors and dealers completely out of window units and running short

of commercial packaged and residential units with weeks of hot summer weather still ahead.

This has been the result largely of last summer's record-breaking heat waves, for with the exception of two really hot days recently, the weather here this year has been fairly normal. That, however, still means it's hot and humid.

Distributors are not surprised by the movement of window units, but the sharp gains in commercial packaged equipment particularly are "fantastic," according to one firm.

"Actually we're running 300% ahead of last year on commercial equipment," this distributor says. "The market has arrived, it's here."

Many of this firm's commercial units are going into industrial plants with multiple installations in several applications, it was explained. A big gain in sales of 15-hp. units has been registered by this distributor.

Residential air conditioning is also considerably ahead of last year for this firm.

"The increase in commercial air conditioning this year is tremendous," said another leading distributor. "We're running

(Concluded on Back Page, Col. 1)

## Westinghouse Has Remote-Operated Heat Pump System

STAUNTON, Va.—A new remote-operated heat pump announced by Westinghouse Electric Corp. "permits almost limitless installation possibilities," the company announced recently.

The new unit consists of two packages—an outdoor heating and cooling cycle and an indoor air handling unit.

"Requiring only one fifth to one quarter the inside space of prior single-cabinet heat pumps, the two-package remote system can now be installed in homes where the single cabinet type was impractical or impossible due to no basements, small utility rooms, or insufficient height of crawl space or attic," Westinghouse said.

"The inside air handling unit

(Concluded on Back Page, Col. 3)

## BEHIND PAGE ONE . . .

### Small Commercial Dealer

Watching Small Things, Avoiding Cutthroat Business, and Not Having Outside Salesmen  
Contribute To Success . . . . . 8

### Packaged Air Conditioners

Contractor Finds Them Economical, More Adaptable When Converting Warehouse to Office Building . . . . 10

### Cooling Towers

Ability To Cool Water Depends on Difference Between Dry-Bulb and Wet-Bulb Temperatures, Expert Says 17

### You Need a Lawyer

Competent Legal Advice Is Valuable from The Moment You Decide To Go Into Business . . . . . 21

### Servicing Weathertron Heat Pumps . . . . . 24

## Las Vegas RACCA Urges Architects Have Bidders Give Subcontractor List

LAS VEGAS, Nev.—A resolution urging architects to require general contractors to submit with each bid a list of the bona fide subcontractors in connection with their bids was approved recently by the Refrigeration and Air Conditioning Contractors Association of Clark County, Nevada.

The resolution also urged architects to require that any saving of money resulting from negotiations after the bid is let

(Concluded on Page 25, Col. 1)

## G-E Raises Factory Price On Most Room Conditioners

LOUISVILLE, Ky. — Factory prices on most of General Electric Co.'s room air conditioner models have been boosted 1% to 3% because of "continuing advances in the cost of most of the basic materials" used in room units, the firm said.

The increases apply to the custom and deluxe models of the "Thinline" series in the 1/2, 3/4, and 1-hp. sizes. On the 3/4 and 1-hp. models, the increase will be about \$5 at the factory.

Paul M. Augenstein, general manager of G-E's room air conditioner department, pointed out that the company does not set retail prices on air conditioners. He said that although these are established at the local level, retail prices normally would reflect a rise in factory price.

## First Paper-Making Felt Plant In South Completely Conditioned

STARKVILLE, Miss. — Lockport Felt Co. here, processor of "the largest and longest felts ever made in this country" and the first paper-making felt plant of its kind to locate in the south, is completely air conditioned by Worthington.

The refrigeration units, comprised of six compressors and three condensers, are capable of supplying a total of 101 tons of refrigeration to cool the offices and the cafeteria plus maintaining a constant degree of climate control in the store rooms and conditioning rooms.

A branch of Lockport Felt Co. of Newfane, N. Y., it is reportedly the first to air condition its weaving room which

boasts a \$20,000 edge grain maple floor.

According to Warren G. Kleban of Warren G. Kleban Engineering Co., the Worthington distributor and mechanical contractor for the job, the main function of the Worthington equipment in the weaving room is to assure a constant temperature and humidity year-in and year-out so that a standardization of physical properties and quality can be maintained.

The product, which is manufactured, is used in a similar manner as would be a V-belt (it differs in that it is used for conveying paper pulp rather than driving a machine) and

(Concluded on Back Page, Col. 1)



## Canton, Ohio Water Chairman Asks for \$6-per-Ton Charge on 'Water Wasters'

CANTON, Ohio—A recommendation that the city adopt a model ordinance requiring water conservation devices on all 5-ton and over water-cooled air conditioning units installed here was tabled by City Council until the July 2 session.

Councilman Allan C. Sterling, water committee chairman, presented a report recommending this code, with provisions for an annual demand, or surcharge, of \$6 a ton for city water-cooled air conditioning units without a water conserving device.

City Council gave indications it will be cool toward this measure, despite Sterling's pleas that the city's primary concern in the regulation is the conservation of water.

As proposed, Sterling ex-

plained, the regulation would not necessitate addition of water conservation devices on existing air conditioning equipment. He added that the proposed surcharge, initially set for \$12 a ton, has been lowered. He pointed out that other cities have similar charges ranging from \$2.50 to \$40 per ton.

"Something has to be done," said the water committee chairman, "to discourage use of water-wasting air conditioners."

Air conditioning representatives, at a recent public hearing, pointed out that present water-cooled equipment probably will give way to air-cooled units within the "next year or two," he said.

But, he continued, this is only an assumption. There is nothing "definite to assure this."

## Gibbs Promoted to Gen. Sales Manager At Mueller Brass

PORT HURON, Mich.—A. C. Dappert, vice president in charge of sales for the Mueller



R. L. Gibbs

Brass Co., has announced the promotion of Robert L. Gibbs to the position of general sales manager.

Gibbs, formerly assistant general sales manager, has served successively as an industrial engineer in the production planning department, district manager of the western New York branch sales office at Syracuse, manager of sales promotion and advertising, and as sales manager of the Wholesale Distributing Div.

## Federal Judiciary To Get Some Money for Piece-Meal Cooling

WASHINGTON, D. C.—The judiciary is going to get some money for air conditioning certain Federal court rooms and offices, but the fund approved is less than half the amount requested.

The requested \$1.5 million fund was cut to \$575,000 in the Justice Dept. appropriation bill (HR 10721) recently approved by conferees of both Houses and signed by the President.

The House originally refused to approve the fund for installation of room or packaged air conditioners in court rooms and offices in places where extreme heat reduces judicial efficiency.

Involved was a dispute between the judiciary and the General Services Administration over "piece-meal" versus "basic"

air conditioning. The GSA opposed further court air conditioning on a room-by-room basis, favoring instead complete cooling of buildings.

However, the Senate disagreed with the GSA and approved a fund of \$1.5 million. A Senate-House conference to iron out this and other differences on the appropriation bill resulted in a compromise on the \$575,000 figure. The two bodies apparently left it up to the courts to purchase the type of air conditioning they deemed best.

## Crosley Bendix Offers New Financing Plan

CINCINNATI—An entirely new financial plan has been drafted by Crosley and Bendix Home Appliances Divs., "designed specifically to enable the firm's distributors and dealers to meet the extended-terms competition of captive finance companies."

The new plan, according to D. B. Blatz, general controller for these Avco divisions, "embraces credit and extended terms at wholesale, retail, and consumer levels."

"It is, moreover, a highly flexible plan which can be easily tailored to the varying market requirements found not only in each of the 48 states, but in our differing regional markets," Blatz declared.

Details of the plan will be presented to Crosley and Bendix distributors during conference meetings in Cincinnati, July 9 and 11, at which new television and home laundry lines are slated for introduction, it was added.

## Hospital Conditioning System Minimizes Explosive Hazards

SYRACUSE, N. Y.—A \$13,000 air conditioning system has just been installed to control temperature and humidity in the operating rooms of Memorial hospital here, the administrators announced.

Individual room controls now can keep the relative humidity from 56 to 58% and the temperature between 72 and 74°, hospital officials asserted recently.

Such controls are purposely set at ideal temperature and humidity to minimize explosive hazards as well as to make the operating rooms more pleasant for doctor and patient, they pointed out.

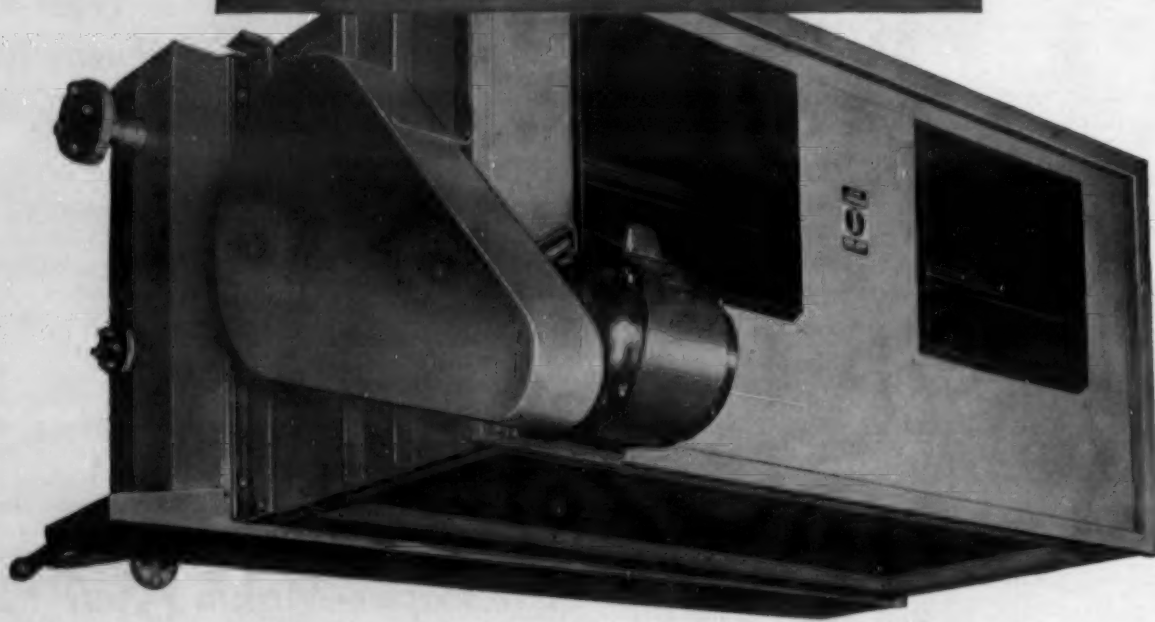
There is also now complete exchange of air in each of the five rooms of the operating suite. Previously the recovery room had been air conditioned as had the X-ray suite and the eye operating room, it was explained.

A six-month project, installation of the new equipment was carried on while the hospital maintained a full operating schedule. Exterior portion of the equipment is housed in a small building on the hospital roof.

Announcing...

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for FREON and AMMONIA

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The only completely automatic system for freezing temperatures offering these extra large capacities. THERMOBANK requires no manual attention whatsoever.

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**More Types and Sizes!**

**More Features and Beauty!**

**Promotional Models! Competitive Prices! Easy Installation!**



Now Kelvinator brings you a truly flexible line of newly-styled, newly-engineered kitchen cabinets . . . a line so complete that it answers every full or partial kitchen installation problem. Here is a line that has that luxurious custom look and top quality all-steel construction, yet is priced right for a competitive market. A complete advertising and promotional

program is ready to go to work for you. And our new, easy floor display plan gives you an outstanding display that allows you to demonstrate and sell the complete line with a minimum inventory investment. Write today for complete information. Kelvinator Division, Detroit 32, Mich. or call your local Kelvinator distributor or zone office.

## 12 COLORS TO SELL WITH . . .

8 DECORATOR COLORS TO MATCH KELVINATOR APPLIANCES PLUS 4 ADDITIONAL COLORS TO MIX AND MATCH

**More  
Exclusive  
Features**



Deepest, single piece, rounded design drawer made. No corners to catch dirt.

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Neoprene tires on nylon rollers assure permanent quiet and easy operation.

Adjustable shelves, a real cabinet feature, add more convenience for extra storage.

Bonderized steel, exclusive finishing methods for a smooth surface that endures.

Sturdy spring hinges hold doors fully open or closed, prevents accidental bumping.

# Kelvinator

Division of American Motors Corp., Detroit 32, Mich.

American Motors Means



More For Americans



## Admiral Bows 2-Door Model at \$249.95

CHICAGO—A two-door refrigerator priced at \$249.95—20% less than the company's previous low end two-door model—was announced last week by Admiral Corp.

The new model, TD1168, can accommodate 56 lbs. of frozen food.

A custom two-door refrigerator, model CT1190, and three special freezers also were introduced.

According to J. R. Oberly, vice president-appliance division, the refrigerators are styled

with square tops which make the cabinets suitable for custom installations.

"Model CT1190 never requires defrosting," the company pointed out. "It has a sub-zero chest with 81-lb. capacity, a high-speed freezing shelf formed by refrigerated coils, and a bottom freezing surface."

The three special freezers include one chest and two upright models. A 10.3-cu. ft. freezer, model 11U50A, is priced at \$199.95.

The second upright freezer is an 18-cu. ft. model with a 630-lb. capacity. The 20-cu. ft. chest freezer, 20F71-1, is being offered as a "summer special" promotion model.

## 'Bull Session' Airs Service, Pricing, Warranty, Sales Help Problems at Mart

CHICAGO—Some of the problems bothering appliance dealers these days—such as centralized service, "jungle pricing," the "excessive warranty burden," and how to attract and compensate salesmen—were aired at a bull session held here recently under sponsorship of the Merchandise Mart and the National Appliance & Radio-TV Dealers Association.

Discussing centralized service, Harold Witham of Bakersfield, Calif. asked what right a manufacturer has in a retail servicing market. He claimed that centralized service is "subsidized, part of the manufacturer's cost, and everybody pays for it."

### Centralized Service 'Problem for Dealers'

Declaring that centralized service is a problem for every dealer, Witham said he has talked with retailers who say: "If you don't sign up for centralized service, you don't get the line."

Dealers have an obligation to service the merchandise they sell, Witham asserted, adding that the more dealers line up with centralized service, the rougher competition will be.

### 'Excessive' Warranty Burden Cited

The "excessive warranty burden" on the dealer was cited by Thoben Elrod, Atlanta distributor. He contrasted this with 90-day warranty in the automobile industry whose products are much higher priced. Elrod also pointed out that there is a scarcity of appliance servicemen.

George Johnston of Minneapolis called on manufacturers to establish uniform retail prices and then protect those prices.

"I am not necessarily talking list price, if list price is too high," he explained, "but I mean prices all customers can get."

### 'Jungle Pricing' Will Not Increase Appliance Sales

Maintaining that "Jungle pricing will not increase the appliance business once the price is skimmed," Johnston said salesmanship has deteriorated with such pricing.

"Give confidence in the product and its retail price to the retail salesman," he urged, declaring that factories give this confidence to the wholesale salesman but not to the man on the retail floor.

Another point made by Johnston was that young people avoid the retail appliance field. He charged that no manufacturer seems genuinely interested in the retail salesman to the extent of helping him better his income.

Offering fair financial return and a means to qualify for advancement were suggested by Jack Sparks, general sales manager for Whirlpool-Seeger Corp., as the best ways to attract good men to the industry.

Harry Price of Norfolk, Va. said answers to the big increase in production capacity since 1950 include creating the desire in consumers to buy—through

advertising and promotion—and better trained sales personnel.

Price listed the basic factors necessary for developing a sales staff as a sound compensation plan, training program, supervision, and motivation for the force.

In outlining the fixed-percentage and percentage-of-margin forms of compensation, Price noted that the former is declining in popularity and the latter increasing. He also pointed out that some dealers pay 1% plus spiffs.

Charles Jett, another dealer, reported that he pays 20% of gross profit under a new compensation plan he has been using. Jett said that since he inaugurated this plan, volume has risen 50%, gross margin has declined slightly less than 3%, and salesmen's income has increased 40%.

### York Commercial Div. Appoints Ad Agency

YORK, Pa.—J. Keith Loudon, vice president and general manager, commercial Div., York Corp., a subsidiary of Borg-Warner Corp., has announced the appointment of Arthur Grossman Advertising, Inc., Chicago, as advertising agency for the Commercial Div.

"York's move for greatly expanded coverage," said Loudon, "requires close coordination of marketing, merchandising, and advertising."

"An extensive program of big new promotions for moving goods through distributors and dealers, plus a heavy schedule of ads in trade papers and consumer publications is due."

## Unarco Sale--

(Concluded from Page 1, Col. 3)

National Radiator Co. and United States Radiator Corp. National-U. S. Radiator had net sales of over \$54 million last year.

Unarco's Air Conditioning Div. has been a major supplier of air conditioning products to National-U. S. Radiator.

Union Asbestos & Rubber manufactures railroad and industrial insulation of asbestos, packings, gaskets, and textiles; railroad refrigerator car equipment; and refrigeration units for highway trucks and trailers, in addition to air conditioning equipment.

Hokin stated that the transfer of the Air Conditioning Div. to National-U. S. Radiator was the result of a long-term policy decision to concentrate Union Asbestos & Rubber Co.'s activities on their older and more established divisions.

National-U. S. Radiator plans to continue to market their air conditioning products under the Unarco label, Hokin pointed out, as they feel the name has gained acceptance in the industry, despite the relatively brief period in which Union Asbestos & Rubber was engaged in the air conditioning business.

### J. H. Carmine Joins Chrysler Management Staff as Advisor

PHILADELPHIA—James H. Carmine, former Philco Corp. president, recently joined the management staff of Chrysler Corp. He will serve as marketing and merchandising consultant for all divisions of the firm.

Serving as an advisor in advertising, distribution, sales, and other marketing phases of Chrysler, Carmine also will continue as marketing and merchandising consultant for Philco.



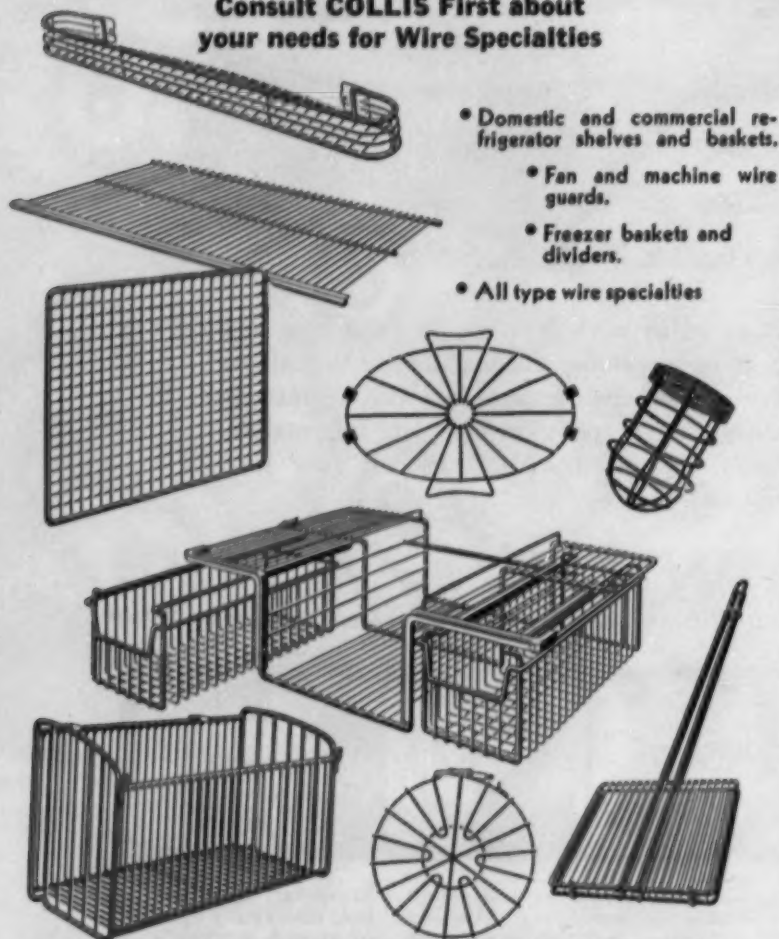
## THE COLLIS COMPANY 55 Years of Wire Forming and Welding WIRE SPECIALTIES

Why not reduce costs? Let us help you design wire parts. Collis ingenuity will pay you dividends. Collis manufacturing methods assure uniform quality.

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CENTRAL COOLING**

WILLIAMSON Waterless Wethermatic AirRefrigeration units can be added quickly and easily to any residential or store forced air heating system. Choose from plenum, duct, counterflow, suspended horizontal or console types for efficient low cost operation.

- No water needed
- No sewer or water connections
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- Pre-wired for easy installation
- 2, 3, 5 and 7½ ton models
- Full tonnage provided

Plenum type illustrated may be installed above or below furnace.

Write for complete information today

**WILLIAMSON  
WETHERMATIC  
AirRefrigeration**

THE WILLIAMSON CO., 3320-E7 Madison Rd., Cincinnati 9, Ohio





DISPLAYED against black velvet background were gold-toned Moduflow controls, including an electronic control, outdoor thermostat, indoor thermostat, and flush-mounted timer clock, used by Bryant salesmen for calling on customers in a recent promotion of air conditioning.

### Bryant Promotion Boosts 3-Mo. Conditioning Sales 200% over 1955 Period

INDIANAPOLIS — For a three-month period, beginning Feb. 1, Bryant "went on a pre-season air conditioning sales spree that boosted sales 200% over the same period the previous year," Bryant reported.

Bryant called its pre-season drive "The Moduflow Promotion." The name was derived from the Minneapolis-Honeywell Electronic Moduflow Temperature Control System "that was the frosting on the promotional cake."

#### Dealers Applied Free Moduflow as Incentive

During the promotion, Bryant dealers were able to give their customers free of charge a deluxe temperature control system nationally advertised at \$225, it was pointed out. Dealers could apply the Moduflow incentive in the sale of either air-cooled or water-cooled central systems in 2, 3, or 5-ton capacities.

Bryant touched off its promotion with trade publication advertising geared to the theme of "Grow Bigger With Bryant."

#### Kit Called 'Eye-Opener'

"For calling upon the customer, a Moduflow kit was an eye-opener," Bryant noted. "Displayed against black velvet background were the golden-toned Moduflow controls . . . an electronic control, outdoor thermostat, indoor thermostat, and flush-mounted timer clock."

"Broadside, envelope stuffers, and ad mats were additional dealer helps available to soften up prospect lists."

Bryant also pointed out that "while the customer was sold an air conditioning system that he wouldn't use until hot weather, he received free of charge an electronic temperature control system that he could use immediately."

#### Controls Help Heating System

"A Bryant salesman could tell a prospect: 'Here's a control system where the outside thermostat tells the inside thermostat what to do before the inside temperature has a chance to change . . . what's more it has a clock-controlled night setback feature . . . it's all controlled electronically . . . and will help your heating system right now.'"

Not only was the Moduflow

kit free to Bryant air conditioning customers, it was also free to Bryant dealers. The cost was borne by Bryant distributors and the company.

"About 50% of the Bryant sales during the Moduflow promotion went into new residences of the \$20,000-\$30,000 price category," the company noted.

"The least expensive home to have an air conditioner installed was a \$9,000 home which took a 2-ton air-cooled unit. The most expensive was a \$150,000 home which took 3-ton and 5-ton water-cooled units."

### Thatcher Names Linskey Air, Water-Cooled Conditioners New To Ingersoll Line

GARWOOD, N. J.—The appointment of Henry J. Linskey as sales engineer for the Philadelphia-Wilmington area, has just been announced by Russell M. Cook, vice president of Thatcher Furnace Co. here.

Linskey will be responsible for dealer sales-service.

Prior to joining Thatcher, Linskey was active in his own heating and air conditioning business in Philadelphia. Before this, he was a wholesale heating salesman covering the Philadelphia area.

KALAMAZOO, Mich.—A completely redesigned line of heating, cooling, and related equipment has been announced by the Ingersoll Conditioned Air Div., Borg-Warner Corp.

The air-cooled and water-cooled air conditioners are entirely new, never before having been available under the "Air-line" name.

The new line contains coal,

oil, and gas furnaces in a wide variety of capacity and styles including high-boy, low-boy, and horizontal units. Coal furnaces are available in both gravity and forced-air models.

Other items now available include conversion burners, incinerators, and gas and electric hot water heaters.

#### Royalair Names Manning

DALLAS—Glenn Manning has been appointed general manager of Royalair Distributors, Inc., distributor of Chrysler Airtemp air conditioning equipment.

— 1906 —



Advanced engineering for 1906! The carbide gas headlamp lighted the way for daring motorists who ventured out after dark. It was 1906 when the first Brunner-engineered product appeared.

# TODAY

Look to Brunner  
for Refrigeration  
Condensing Units . . .  
engineered to give years  
of dependable service

THE BRUNNER COMPANY, SALEM, MASS., U.S.A.  
BRUNNER MANUFACTURING COMPANY, SYCAMORE, ILL., U.S.A.  
IN CANADA: BRUNNER CORP. (CANADA) LTD., TORONTO, ONTARIO



Choose the unit best suited for the job . . . from the Brunner-Metic semi-hermetic line. Sizes range from 1/4 H.P. through 3 H.P. Also a complete line of Open-Type Condensing Units, from 1/4 H.P. through 100 H.P.



## 60 Specialized Central Units To Air Condition Dallas Airport Terminal

DALLAS—The new Love Field Terminal building reportedly will contain one of the largest and most modern air conditioning systems in this city.

A spokesman said more than 60 large, central station air conditioning units, capable of circulating 450,000 c.f.m. and manufactured specifically for this installation by American Blower Corp., will produce a total air conditioning effect in excess of 2,000 tons of refrigeration.

It was pointed out that the air conditioning of such specialized type of structures encompasses many unique problems. For instance, the cooling of an all-glass enclosed control tower located in the hot Texas sun at

the eighth floor level is a major technical problem.

"Many of the large air conditioning units in this building will operate at what is commonly termed in the air conditioning as high pressure," it was explained. "This type of factory-designed and fabricated unit is the latest product of the American Blower Corp.'s research laboratories."

## Transport Heating, Refrigeration Mfr. Moves To New Plant

SOLON, Ohio—The Hunter Mfg. Co., manufacturer of heating and refrigerating equipment for the transport industry and heating equipment for U. S. military forces, has moved into a newly-constructed plant at 30525 Aurora Rd. in this suburb of Cleveland.

Located on a 6½-acre plot,

the one-story brick and stone structure contains 33,000 sq. ft. of space—26,500 ft. devoted to manufacturing and 6,500 ft. to offices and engineering development.

Founded in 1939 by Robert H. Hunter—now its president—the company manufactures controlled dry ice and mechanical refrigeration systems and a complete line of gasoline and LP gas heaters for the transportation industry.

## Leather Goods Firm To Build Modern Conditioned Plant

ST. LOUIS—Prince Gardner Co., manufacturer of personal leather goods, will include in its expansion program the erection of a modern air conditioned building to house a factory and executive offices.

A company spokesman said the 34,000-sq. ft. building will occupy approximately three acres.

## Viewers Watch Announcer's Test



TELEVISION announcer George Milner, after a trial run to see for himself, underwent a lie-detector test before his Dallas area audience recently, attempting to prove that everything he said, even descriptive adjectives, about the "Frigiking" auto air conditioner was true.

## Lie-Detector Proves TV Sales Talk on Auto Conditioning

DALLAS—A lie-detector machine proved here recently that a Dallas (WFAA-TV) television announcer spoke the truth when he described the merits of a sponsor's product—the "Frigiking" automobile air conditioner.

### BELIEVED TO BE FIRST TEST OF ITS KIND

The test, believed to have been the first of its kind, found Veteran Telecaster George Milner speaking for 120 seconds on Frigiking—manufactured by the Frigikar Corp. of Dallas. Milner's remarks were based upon actual experience with the product, which he had tested the day prior to the telecast, it was explained.

Production of the unique advertising approach was devised by The McCarty Co. of Texas, Dallas office of a national advertising and public relations firm. The McCarty Co. also conducts the advertising of Frigikar's truck air conditioner, "Frigikab," and the luxury auto air conditioner, "Frigikar."

In order to lend complete authenticity to the program, Andrew Smith, vice president of the Smith Detective Agency of Dallas and chief of its lie-detector division was present to interpret the polygraph's (lie-detector) reactions to Milner's statements about the automobile air conditioner, it was further reported.

### 158,000 WATCHED POLYGRAPH'S NEEDLES ROAM DIAL

As Milner spoke, TV cameras zoomed in on the polygraph needles, giving an estimated 158,000 viewers a chance to see the lie-detector readings simultaneously with Milner's comments.

"The lie-detector showed that Milner spoke the absolute truth about the Frigiking automobile air conditioner, even the descriptive adjectives," Smith said after interpreting the symmetrical lines made by the polygraph needles.

Russ Jurgens, vice president of The McCarty Co.'s Dallas office, said Sunday's program could quite possibly establish a new approach in TV commercial advertising.



Lehigh BLU-COLD heavy duty open type units, refrigerate the storage and display cases of America's super-markets.



Lehigh Hermetic Units are thoroughly proven in millions of installations—commercial, industrial and automatic vending.



Lehigh refrigerated transportation systems—with the "Million Mile Service Record"—are standard equipment on America's leading fleets and carriers.



Lehigh's truly fabulous V-93 automobile air conditioning compressor is the most advanced unit of its kind and is used on top quality cars.

**Lehigh Manufacturing Co., LANCASTER, PA., DIVISION OF LEHIGH, INC.**

Export Dept., 13 E. 40th Street, New York



## Inside Dope

By GEORGE  
F. TAUBENECK

(Concluded from Page 1, Col. 1)

Alexander is the pitcher who clinched a World Series for the St. Louis Cardinals in 1926 by striking out Tony Lazzeri, after two were out and with the bases filled, in the seventh and final game.

"What people forget is the second strike," Alexander points out. "Lazzeri pulled the ball into left field, and it wasn't foul by as much as a foot."

"If it had been fair, three or four runs would have scored, the Yankees would've won the series and I'd have been an all-time goat."

### The 1956 'Rabbit Ball'

Is the current baseball the liveliest yet? Listen to pitcher Walter Masterson, who retired in 1953, made a comeback with the Tigers in 1956:

"Whenever I grip a new ball hard I can hear the rabbit's heart beat faster."

### Private Joke for Ray Herrick of Tecumseh

Legendary "Cap" Anson's full name was Adrian Constantine Anson. Seems his mother was born in Adrian, Mich., and his father in Constantine, Mich.—hence, his peculiar given names.

"Always was grateful," Anson used to wisecrack, "that mom wasn't born in Kalamazoo and pop in Ypsilanti."

### How Did We Get So Old So Quickly?

Nothing more sharply illustrates the fleeting of time than this: a baseball star finds himself on the same club with the son of a former teammate.

Thus, pitcher Bob Feller of the Cleveland Indians, at the ripe age of 37, possibly felt even older when he teamed in battery with rookie Earl Averill, Jr. The latter's father was with the Tribe when Feller joined the Indians.

Elmer Valo, outfielder with Philadelphia, can remember teaming with Earle Brucker, Sr., in 1940, and again with Earle, Jr., in 1948.

That also goes for the late Hall of Famer Al Simmons, who lasted on the Philadelphia American League club through both Eddie Collins, Sr. and Eddie, Jr.

Another example is "Little Poison" Lloyd Waner, who roamed the Pittsburgh outfield with "father" Clyde Barnhart in 1927-28. Lloyd was back with the Pirates in 1944-45 to play

alongside "son" Vic Barnhart. Ray Schalk, White Sox receiver, and Urban (Red) Faber, stellar hurler, both bridged the gap in that club between 1912-16 when Ed Walsh, Sr. was confusing batters, and 1928 when Ed, Jr. threw less powerful pitches.

A token relationship existed between Faber and the William Sullivans, Sr. and Jr. The elder Bill caught one game for the 1913 Chisox, Faber's rookie year. And the old spitballer was still around when the junior Sullivan later joined the Pale Hose.

Teammates Walsh and Sullivan of the "Hitless Wonders" era saw their sons and namesakes play together on the same club later on, in 1932.

In 1956 six active young men whose fathers played in the major leagues were on National and American rosters. Besides Averill, they included

Dave Sisler and George Susce, Jr. of the Red Sox, Don Mueller of the Giants, Duane Pillette of the Phillies, and Chet Nichols of the Milwaukee Braves.

Imagine the pride of their fathers!

### Feminine Intuition

Night before Memorial Day, 1956, the Tigers checked into a Kansas City hotel. Eight or nine of them squeezed into an elevator together. The girl operator blithed:

"Bet you fellows win a double-header tomorrow."

"What makes you think so?" asked Frank House.

"The White Sox checked out today, and they looked mighty skinny."

House still can't figure out that "howzat again?" repartee. Fact remains that Detroit did win both ends of the double-header.

### Conversation Starters

There are 883 seats in the Baltimore Stadium which are never sold. Reason: They are behind posts. We go for this idea.

Lou Boudreau is in his fourteenth year as a major league manager, although he is only 38 years old. And he is a personal friend of Al Schildhamer of AC&RN.

Only one active major league player, Enos Slaughter, had participated in more than 2,000 games starting the 1956 season.

Yogi Berra has led the Yankees in runs-batted-in for the past seven seasons. Wanna bet he won't beat out Mantle this year?

In 1955 there were 52 no hit games pitched in the minors.

There are only five pitchers in the National League who

have won 100 or more games in the big leagues.

Of the eight managers in the American League four are former National League players: Casey Stengel, Al Lopez, Charley Dressen and Marty Marion. Contrariwise, National League managers Freddie Hutchinson and Birdie Tebbetts spent their active player careers in the American League.

### Berra at His Best

The Yankees' colorful catcher (Yogi Berra—who else?) tossed a question at Jackie Robinson after the Dodgers trimmed the Yankees in the 1955 World Series and became champions of the world for the first time.

Deliriously happy, Robinson was running around shaking hands with everybody in the Yankee clubhouse.

"Hello, Jackie," Yogi straight-faced. "What's new?"



# READING

## "LEKTROSEAL"

### COPPER REFRIGERATION TUBE

**FIRST STEP**  
in a Quality  
Installation—

Soft temper for easier forming . . .  
dehydrated — with crimped ends  
to seal out all moisture and dirt . . .  
and keep the inside surface absolutely clean. Comes in handy 50-foot coil packed in its own convenient protective carton, clearly labeled for easy identification. To be sure of the job — be sure to specify Reading.

**READING TUBE CORPORATION**  
EMPIRE STATE BUILDING, NEW YORK 1, N. Y. WORKS: Reading, Pa.

**Distribution Depots:**

<b>READING, PA.</b>	<b>DALLAS, TEXAS</b>	<b>OAKLAND, CALIF.</b>	<b>CLEVELAND, OHIO</b>
<b>WOODSIDE, L.I., N.Y.</b>	9000 Sovereign Row	410 Hegenberger Road	4615 Perkins Ave.
57-17 Northern Blvd.	Brook Hollow Industrial District	<b>LOS ANGELES, CALIF.</b>	<b>ATLANTA, GA.</b>
<b>CHICAGO, ILL.</b>	<b>HOUSTON, TEXAS</b>	120 No. Santa Fe Ave.	600 Murphy Ave.
724 W. 50th St.	1121 Rothwell St.	<b>DENVER, COLO.</b>	S.W., Unit 3, Bldg. B
		2845 Walnut St.	

**Fast Delivery COILS**  
TOP QUALITY  
EVAPORATOR  
CONDENSER  
WATER STEAM  
1 TO 50 TONS 2 TO 8 ROWS  
**Tubenfin COIL CO.**  
8035 HARTFORD, HOUSTON 17, TEXAS

**Sold Through Wholesalers Only**



Mrs. Have a Hand In It

# Small Dealer Sells Many Commercial Units by Hard Work, Service, Doing Good Job; Sees Trend to Open-Type Cases

By John O. Sweet & George M. Hanning

KALAMAZOO, Mich. — You don't have to be a big operator to succeed at selling commercial refrigeration equipment. But you have to work like the devil!

R. E. Smith, head of R. E. Smith & Co., has found that to be the case in his 27 years in the "sales and service" business here. Smith is pretty much of a one-man operation and likes his role.

His "& Co." consists of his eldest son, R. E. Smith, Jr.; a part-time helper, John Engel; and an office girl, Joan Haney.

Smith reads about business expansions and mergers in the

newspapers. But he has no such ambitions for his own firm.

"You've got to be either big or small today," Smith philosophizes. "There's no money to be made in the middle. Higher cost of operation eats up all the profits."

His present volume of sales could support a larger force, he admits. But, he says it would cost too much money to put two or three men on the road.

"I wouldn't consider expanding unless I could add 20 or 30 men. And that is something else again," he declares. "No, I'll stay small and make more money with fewer headaches."

Smith started out on his own 10 years ago. Before that, he was the "Smith" in the partnership of Stafford-Smith, which is still an active commercial refrigeration and air conditioning firm in Kalamazoo.

Smith now handles Koch refrigeration and air conditioning equipment, covering 14 counties in western Michigan. He also sells Kelvinator commercial units.

Smith gives the equipment manufacturers plenty of credit for the success of the small distributor today.

A few years ago, he noted, installation and service were a "bugaboo and headache" for the small dealer. But today, the



STUDYING BLUEPRINT for a new market, R. E. Smith, head of R. E. Smith & Co., Kalamazoo, Mich. commercial refrigeration and air conditioning firm, checks on requirements for new refrigeration equipment.

quality of equipment being manufactured is very good, he commented. This cuts down on the time spent on installing and servicing equipment, an expensive matter particularly in the further reaches of the territory.

Smith also commended manufacturers for their assistance to the dealer in direct mail promotions and in engineering services. Such aid has saved considerable time for him.

To cover his territory, Smith relies heavily on the telephone and factory literature mailed directly by the manufacturer to a list prepared by himself.

## '99 1/2% of Business' Received by Phone

Smith said that "99 1/2%" of his business is received over the phone. He doesn't have salesmen out in the field because food merchants are busy men and resent having someone on their coattails all the time, he asserted. "I know I do," he commented.

Smith advertises only in the classified section of the local telephone book. He credits word-of-mouth advertising with helping bring in business.

"Everybody says we're nuts," he observed, "but we have all the work we can do and we're happy."

## Stays Clear of 'Cutthroat Business'

Pointing out that he makes no effort to get what he calls "cut-throat business," Smith explained that he works closely with the Independent Grocers Alliance district office at Holland, Mich. He said it took him about two years to promote this arrangement. But, with the present trend to modernization in the organization, it has paid off well.

When his firm gets an IGA job, Smith noted, it receives a set of blueprints "which we mull over. One of their experts comes here and we thrash over the layout for possible changes. We work well together, and the factory works hand-in-glove with us."

Smith termed this arrangement "a very happy triangle."

The veteran refrigeration man's philosophy is that if you do a good job for the customer (Concluded on next page)



# Chicago serviceman makes more calls per day, fewer call-backs using Ansul Refrigeration Oil

John Bechtel has been able to increase his income because Ansul Oil has cut his call-backs. Now, he is able to call on more customers per day than ever before. This is possible because Ansul Oil is dry, wax-free, non-foaming and tops in the refrigeration industry for stability. According to John it's the one oil that works for him, not against him.

Because Ansul Oil is dry you can almost forget about trouble caused by acid formation and sludge deposits, provided of course that you keep the refrigerant dry. The Ansul T-FLO DRIER will take care of that job for you. The non-foaming feature of Ansul Oil prevents excessive carry-over from the compressor to the low side. Keeping the oil where it belongs reduces the danger of broken valves. Using an oil that is wax-free

can save you a lot of trouble. Wax can plug capillaries as well as cause sticking expansion valves. And because Ansul Oil is stable you can be sure of long lasting lubricity. Remember, too, that Ansul Oil is an all-purpose oil with special emphasis placed on its compatibility with the fluorinated refrigerants.

Ask your Ansul Wholesaler about the new DRY-EYE fitting. The window changes color to let you see if the system is wet or dry.

Specify Ansul Oil on your next order. It's the high quality oil that works for you, not against you. THE ANSUL CHEMICAL COMPANY, Marinette, Wisconsin.



## INQUIRIES AND PARTS ORDERS FOR

- AIR CONDITIONERS
- REFRIGERATORS
- FREEZERS and
- BEVERAGE COOLERS

Made By  
UNIVERSAL MAJOR ELEC. INC.  
& ARTCRAFT MFG. CO.

Including these Brands: Alasco; Ambassador; Armald; Artkraft; Coolaire; Cromwell; Hunter; Kalamazoo; Magicair; Majestic; Orley; Perfection; Philharmonic; Plymouth; Presteline; Supremacy; U.S. Capitolaire.

SHOULD NOW BE SENT TO

**UNIVERSAL**  
UNIVERSAL DIVISION  
THE HORTON COMPANY  
915 Liberty Ave., Pittsburgh 22, Pa.



## Small Dealer Ups Business--

(Concluded from preceding page)

and treat him right, "you can't miss."

The company does all its own installation and service work, calling in an extra worker occasionally to help out. When a new job is to be installed, all three men work together on it.

Smith has the new equipment shipped directly to his shop, rather than to the job site. There, he inspects it carefully before trucking it to the market.

### Avoids Bad Impressions, Saves Unneeded Complaints

In this way, Smith can spot any dents or scratches picked up in transit. By fixing them up before the customer has a chance to see them, he avoids bad impressions right at the start and saves unnecessary complaints.

"I can truthfully say," Smith commented, "that we bend over backwards to make a job right. I can cite one job we lost money on (in so doing), but it pays off in more ways than one."

Customers have the home phone numbers of both Smiths in case they should need service when the store is closed. The firm does "outside" service work but such jobs are not allowed to interfere with service to regular customers, Smith said.

### 85% of Sales Now In Open-Type Units

Discussing general trends in food stores today, Smith noted the growing popularity of open-type equipment, even in small towns. He said about 85% of his sales are in such equipment.

One small-town store upped its volume on ice cream 290% by changing over to an open 10-ft. case and also increased its dairy sales substantially by installing three triple-deck open dairy cases, according to Smith.

"So we know that open equipment will increase volume."

Smith also finds that stores are adding more frozen food

equipment. Three years ago, there was one 10-ft. case per store, generally speaking, in the markets of his customers, he pointed out. Today, he said, the average independent store uses 30 ft. or more of frozen food cases.

The operator of a popular market in a small town once predicted to Smith that within five years, there will be nothing

in cans; everything will be frozen.

"That's wishful thinking, I believe," Smith said, "but there's one man's thoughts on the subject and he's a big man."

Smith also finds independent market people are becoming more conscious of the need to air condition their stores. They are now putting provisions for air conditioning in modernization blueprints, although few are installing it yet, he said.

Smith confessed that he had


not been too enthusiastic about getting into the air conditioning business himself, but was being "sucked in" out of necessity. He said he wouldn't today figure a central system for a store because too many outside trades are involved and installation is too time-consuming. "We can't afford to be tied up that long," he remarked.

However, he has installed packaged air conditioners because he can put them in "with little trouble."

### Carpenter Named

PHILADELPHIA—A. A. Carpenter has been appointed factory sales representative for Jordon Refrigerator Co., Inc., it is announced by B. W. Goodman, sales director, domestic products.

Carpenter will handle Jordon's line of home freezers and refrigerator-freezer combinations in the state of Kansas and western Missouri, it was explained.



The graphic features a central sun-like emblem with rays, containing the text "anti-freezers" and "FOR YOUR WATER COOLERS". Below this, a horizontal row of five different ALCO evaporator pressure regulators is shown. To the right of the regulators is a large, stylized illustration of a water cooler coil. The text "ALCO evaporator pressure regulators" is prominently displayed in the center. Below this, several lines of text describe the product's benefits: "They maintain constant evaporator pressure under all load conditions.", "Result: Efficient cooling without freezing—no busted coolers!", and "For any size water cooler from drinking fountains to large industrial jobs." A call to action reads "WRITE FOR BULLETIN 183-54". At the bottom, the ALCO logo is shown next to the text "SEE YOUR ALCO WHOLESALER" and "ALCO VALVE CO. 853 KINGSLAND AVE. ST. LOUIS 5, MO." Below the company name, a list of products is provided: "Designers and Manufacturers of Thermostatic Expansion Valves; Evaporator Pressure Regulators; Solenoid Valves; Float Valves; Float Switches."

## RECTORSEAL No. 2

highest quality sealant  
lowest cost  
finest package



What a combination to beat. Nothing has been spared to make Rectorseal No. 2 the finest compound available for preventing leaks on refrigeration installations. Yet the price is from 20% to 40% lower.

The handy tube has a nozzle tip applicator for easy, clean application. Each tube individually packed in a sturdy cylindrical screw top fiberboard carton.

Thin in the tube, Rectorseal No. 2 spreads smoothly without waste. It thickens to a plastic elasticity in the joint to positively seal against leaks. Insoluble in all refrigerants (gas or liquid) and in oil and water.

Write today for generous free sample of Rectorseal No. 2.

RECTORSEAL Dept. Z

2215 Commerce Street, Houston 2, Texas

**RECTORSEAL**  
NUMBER TWO



# Packaged Units Chosen for Converting Warehouse to Office Building

ADJUSTING VANES on a free-blow package unit is Charles Shontz of W. T. Heaney Co. Paying attention to instructions are C. Pemberton, owners' representative (l.) and Martin Nollen, building manager.



RIGHT: Ductwork from packaged unit carries conditioned air to closed off offices and general office areas in Blue Cross building. Piping below ducts is water lines for cooling. Ceiling will be installed at level of lighting units.



By George M. Hanning

DETROIT—Some 72 packaged air conditioning units are going into the Blue Cross-Blue Shield building here to cool some 125,000 sq. ft. of office space spread over seven floors.

When installation is finally completed, the warehouse transformed into a modern office building near downtown Detroit, will have a total of 530 tons of refrigeration and air conditioning. All but 90 tons of it will be in packaged units.

Most of the Airtemp packages have been installed over the past two months. Their purpose is comfort cooling of the medical and hospital insurance firm's extensive clerical staff.

But, according to Charles Shontz, sales engineer for the W. T. Heaney Co., who sold and supervised the job, 66 hp. will be installed later in nine packages to provide precise, but versatile cooling and humidity control for an IBM machine room yet to be set up.

Of the units already installed, some are equipped with ductwork to cool rows of private offices and remote corners, while others are mounted near pillars to provide free throw air in all directions. The latter are used for general offices with large open spaces.

These units range in size from 2 to 7½ hp. depending on the needs of the individual area to be cooled. The smaller size packages were used, he explained, because the comparatively low 9½-ft. ceiling height cut down on the free blow available, thus requiring more units.

In addition to the package units, six 1-ton room air conditioners are employed to cool three conference rooms. Two are placed in each room.

## Why Were Packaged Units Chosen for Job?

Why did Blue Cross cool its seven-story building almost completely with packaged units?

There were several reasons, according to Shontz.

Main consideration was the available space. There was none for the large machinery needed for a central system.

Secondly, the building had already been constructed as a warehouse and no provision was made for integral air conditioning. Thus it turned out that installing packages was actually the cheaper way.

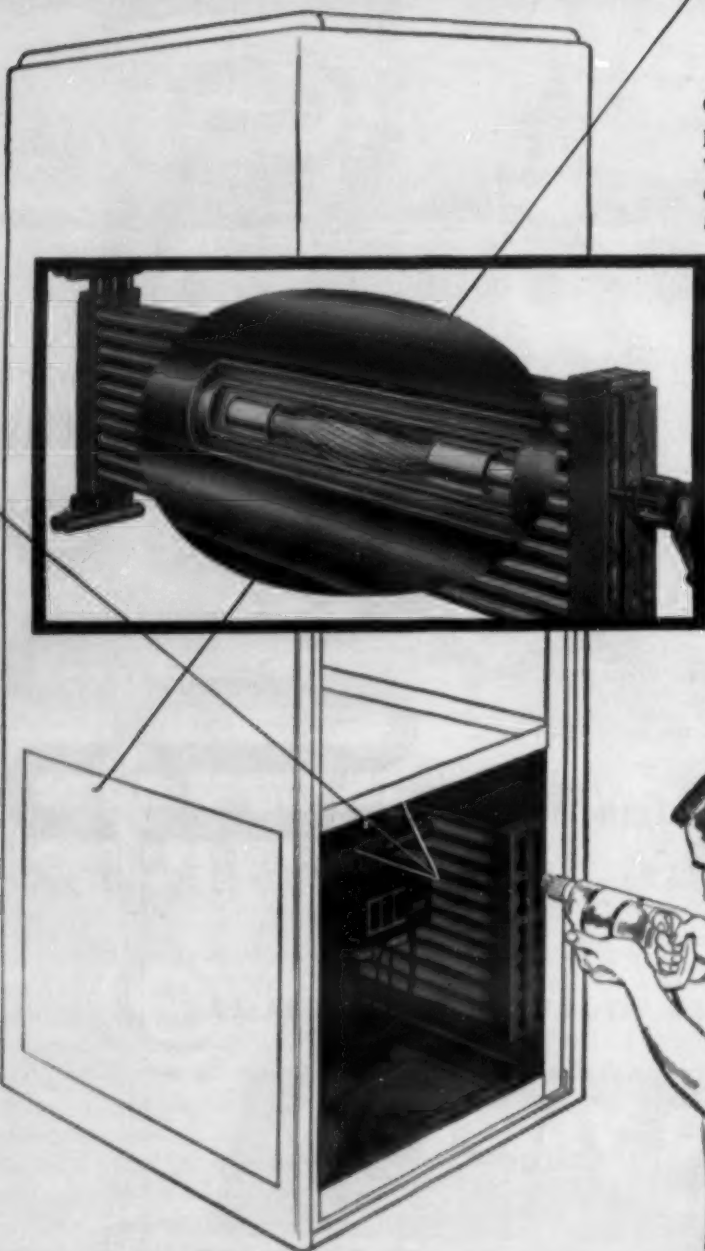
Thirdly, with the building exposed to the sun on all four sides, there was a need for flexible control of all areas. This was readily supplied by packaged units, along with automatic zone control.

While individual units are manually turned on and off at the beginning and end of working hours, thermostats on the units provide automatic control during operation.

When the insurance organization took over the old warehouse building two years ago, it immediately began a modernization plan and added two stories. At that time 90 tons of central air conditioning was installed by the Heaney Co. using Vilter units. One provided 50 tons of cooling for the fifth floor

(Concluded on next page)

## we protect the warranty because... this Condenser is **CLEANABLE**



Opening a hermetically-sealed system to replace plugged condensers means voiding the warranty. But Halstead & Mitchell condensers are **CLEANABLE** without breaking into the refrigeration system.

**CLEANABLE** Condensers eliminate the danger of opening the sealed system to moisture and dirt... mean no expensive scrapping of the old condenser. Your serviceman, using a simple cleaning tool, can restore air conditioning or refrigeration condensers to new-unit efficiency in a matter of minutes. Meanwhile the hermetically-sealed refrigerant remains clean and dry.

Most manufacturers now insist on Halstead & Mitchell **CLEANABLE** Condensers. You'll find it economically sound to do the same!

½ thru 25 tons

HALSTEAD & MITCHELL IS THE WORLD'S  
LARGEST MANUFACTURER OF DOUBLE-TUBE  
COUNTERFLOW CLEANABLE CONDENSERS  
.....

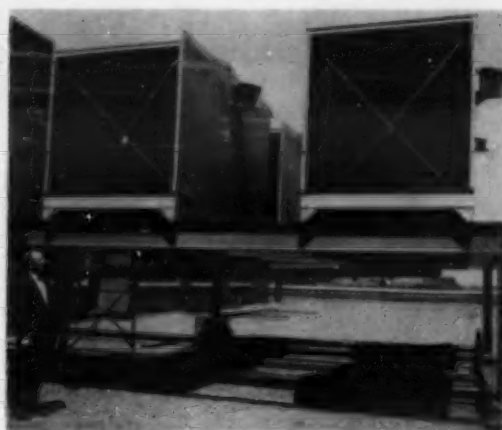
**HM**  
*Halstead & Mitchell*

BESSEMER BUILDING • PITTSBURGH 22, PA.





CHECKING ALIGNMENT of coupling on one of the two 20-hp. circulating pumps that move 15,000 gals. of water through the two systems at 1,200 g.p.m. are Del Collins, piping superintendent (l.) and Shontz. Storage tank in background holds 3,000 gals. of water.



FOUR MARLEY 50-ton cooling towers mounted on the roof will serve two separate water recirculating systems. Shontz notes that pipe running from towers to penthouse drains the towers in winter.

## Packaged Units--

(Concluded from preceding page) cafeteria and the other 40 tons of cooling for the main lobby.

Shontz said that his firm got the order for the 72 packaged units last April and expected to have the installation completed by July.

He noted that two of the units, both 15-hp. models are used to cool the kitchen. They are installed in the kitchen's fresh air supply and are intended to "knock the heat" out of the outside air, according to Shontz.

### All Conditioners Are Water Cooled

All of the air conditioners are water-cooled, he noted. They are served by two water systems utilizing two 50-ton Marley cooling towers on each system.

Because there will be need for some cooling even during the winter months, the towers are hooked up to drain to an inside tank. Automatic by-pass valves are put into the water lines so that when the cooling tower fans cut out, the water can be by-passed directly to the 3,000-gal. make-up tank without going through the tower.

Del Collins, who superintended the piping installation, revealed that there were some two miles of pipe in the systems. Two 20-hp. circulating pumps moved 15,000 gals. of water through the lines at the rate of 1,200 g.p.m.

When the IBM room is set up to house an electronic accounting system, a completely separate air conditioning system will be used to maintain precise temperature and humidity control, Shontz said.

The IBM equipment could not be operated without air conditioning, he remarked, because the plastic tape used must be kept flexible and clean at all times.

The room containing the IBM equipment will have an area of about 3,000 sq. ft. An adjacent office for personnel working with the equipment will occupy an additional 1,200 sq. ft.

Both will be cooled by nine packaged units with a capacity of 66 hp. Two of these units, totaling 12 tons capacity, will be for standby operation. When needed, they will cut in automatically.

In the room with the account-

ing equipment, 75° F. d.b. and 50% r.h. must be maintained 24 hours a day. Air cleanliness

is also extremely important, Shontz said. To do this job, standard packaged units less fan section will be used. In place of the fan section, Cambridge electrostatic filters will be installed along with special fans to overcome the static generated by the filters.

Because of the high sensible heat load generated by the IBM machines, Binks pneumatic

atomizers will be installed to rehumidify the air to the proper humidity level.

While filtering will be employed in both the machine room and the office, humidity control will only be applied in the machine room, Shontz said.

A central panel with pilot lights to indicate proper operation of the air conditioning equipment will be installed in the office, along with means to

manually start or stop it.

Air distribution will be through a suspended ceiling plenum. A portion of the air will be discharged through perforated plates in the ceiling. But the greater amount will pass through "Agitair" strip line diffusers. Each strip diffuser will have its own volume control.

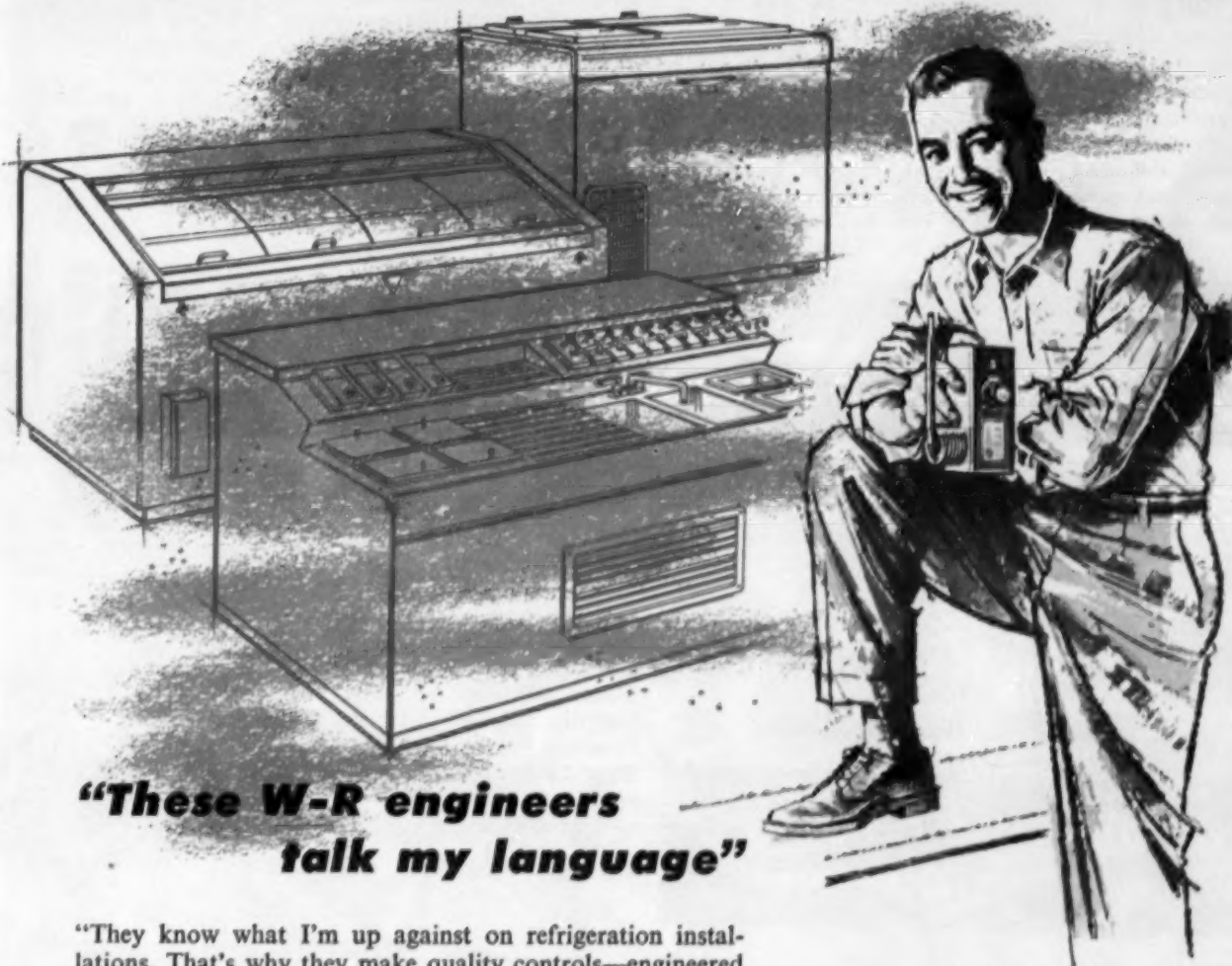
This method of distribution will be used, Shontz explained, to permit the company to shift around the IBM machines, when a change in arrangement is desired, without disturbing the balance of the system.

Because the machines give off so much heat—one alone requires seven tons of cooling—it must be possible to shift the air distribution within the room to meet the new needs, he said.

The air conditioning equipment for the IBM room will be served by its own separate water recirculating system and a Binks 75-ton cooling tower.

("This article is to be reprinted. To place your order, use Information Center coupon.")

## WHITE-RODGERS CONTROLS FOR MODERN REFRIGERATION



**"These W-R engineers talk my language"**

"They know what I'm up against on refrigeration installations. That's why they make quality controls—engineered to prevent costly callbacks. For my money, it's White-Rodgers every time!"

WHITE-RODGERS CONTROLS, with exclusive Hydraulic-Action are unequalled for remote temperature control of commercial and industrial refrigeration. Unaffected by ambient temperature or atmospheric pressure... rugged switches with oversize silver contacts, and enclosed against dirt, and vermin. These features "out guess" trouble... prevent it from happening.

Type 1609-13 with knob adjustment, desirable where temperature settings may be made frequently as on Ice Cream Cabinets, Soda Fountains, Beverage Coolers, etc. Range -20 to +50° F., Adj. Diff. 3 to 25°, 5 ft. capillary with 5/8 x 1/4 inch bulb. Other types available to cover ranges from -20 to +75° F. with capillary lengths up to 20 ft. Write for catalog.



**WHITE-RODGERS Controls for Modern Comfort**  
HEATING • REFRIGERATION • AIR CONDITIONING

ST. LOUIS 6, MISSOURI • TORONTO 8, ONTARIO

WHI-57

For more information about products advertised on this page use Information Center, page 18.



## Room Units Offer Vast Potential for Plastics, Says Johnson of Midwest Mfg. Abrams Heads Quiet Heet Mfg.

NEW YORK CITY—Window air conditioners "should offer more of a potential to the plastics industry than any other major appliance on the market today," according to Roy V. Johnson of Midwest Mfg. Corp., subsidiary of Admiral Corp.

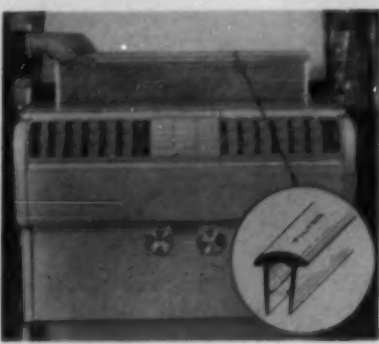
### SEVERAL FUNCTIONAL, STRUCTURAL PARTS COULD BE PLASTIC

Addressing the National Plastics Conference at the Hotel Commodore here, Johnson said that although many parts used in window air conditioners have always been made from metal, several functional and structural parts could very well be molded of plastic.

He asserted that the base pan could be easily molded of reinforced plastic. And, he added, it might incorporate additional parts that in sheet metal would have to be added in further operations.

### PLASTICS COULD SOLVE 2 PROBLEMS

Johnson claimed plastics could solve two problems inherent in metal air conditioners. He listed these as resistance to moisture, to prevent condensation and corrosion, and noise, which comes from sheet metal resonating sound.



EXTRUDED PLASTIC filter holder, supplied by Anchor Plastics Co., Inc. to the York Corp. for this room air conditioner, is a typical example of the rapidly growing use of plastic components in the refrigeration and air conditioning industry. Other plastic items include: breaker strips, tracks for sliding glass doors on display cases, drainage tubes, and thermostat insulating tubing. Colorful plastics with metallic appearance are also being used for trim on many products at costs that are estimated at approximately 50% less than comparative metal trims. Extruded plastics, it is pointed out, do not require painting or refinishing as the color is an integral part of the material.

### Hospital Gets Cooling

DILLON, S. C.—Air conditioning units for the operating, delivery, and emergency rooms of St. Eugene Hospital have been ordered as a result of the receipt of one half of a \$27,900 grant by the Ford Foundation.

JERSEY CITY, N. J.—Stanley L. Abrams, assistant to the executive vice president of Emerson Radio & Phonograph Corp., has been elected president and a director of Quiet Heet Mfg. Corp., a wholly-owned Emerson subsidiary, it was announced recently by Benjamin Abrams, Emerson's president and Quiet Heet's board chairman.



S. L. Abrams

The Quiet Heet firm, located in Newark, N. J., manufactures room, residential, and commercial air conditioners as well as oil burners.

"The election of Stanley L. Abrams," Emerson's president stated, "is an integral part of the recently-announced major reorganization of the parent company's operating structure from a horizontal to a vertical basis, with autonomous divisions. As the newly-elected president of Quiet Heet, Abrams will be the head of Emerson's Air Conditioner-Oil Burner Div., operating independently, responsible only to the executive staff."

John D. Small, president of the subsidiary since October, 1954, has resigned that post to become the parent company's vice president in charge of government relations, with headquarters in Washington, D. C.

Upon completing three years of service with the United States Navy in 1946, Abrams joined the Emerson organization. In 1948, he was appointed manager of the Purchasing Div. In January, 1952, he was advanced to director of purchases.

The following year, Abrams was promoted to the position of director of the material Div. in which capacity he supervised logistics of all materials at Emerson. He held this post until 1955 when he was named assistant to Emerson's executive vice president.

### Cooled Market Opened

ST. LOUIS—Completely air conditioned, a new A & P Supermarket has been opened in the new Florissant Valley shopping center.

The new store, with 10,000 sq. ft. of selling area, features a large frozen food section.

## Philadelphia Distributors' Sales of Room Units Nearly Double Last Year

PHILADELPHIA—May distributor sales of air conditioners nearly doubled those of the same month last year in the five Pennsylvania counties surrounding Philadelphia.

A report by the Electrical Association of Philadelphia said sales of air conditioners for the month were up 96% while sales for the first five months were 97% higher than last year. More than 10,000 units were sold in May and nearly 29,000 in the first five months.

The association also reported that May sales of clothes driers were up 47%, ranges were up

23%, and conventional washers were up 8%. But automatic washer sales were down 3%, refrigerators 5%, dishwashers 17%, and freezers 50%.

For the five months, clothes dryer sales gained 48% over last year, dishwashers 29%, automatic washers 8%, and non-automatics 5%. Refrigerator and range sales were off 4%, while freezer sales were down 51%.

The report covers distributor sales in Bucks, Chester, Delaware, Montgomery, and Philadelphia counties.

Unit sales were as follows:

	May 1955	May 1956	5 Mos. 1955	5 Mos. 1956
Appliance				
Air Conditioners	5,222	10,219	14,681	28,939
Refrigerators	6,354	6,047	28,929	27,991
Freezers	834	421	5,101	2,503
Clothes Dryers	678	1,000	4,900	7,234
Dishwashers	668	556	2,480	3,187
Ranges	1,670	2,047	8,676	8,294
Washers, Automatic	5,462	5,282	22,874	24,736
Washers, Non-automatic	1,157	1,245	5,176	5,431

### Lewyt Signs Protect Units During Construction

BROOKLYN—An unusual merchandising idea is being used by the Lewyt Corp., to advertise the firm's built-in wall air conditioner.

Lewyt makes use of air conditioning installations to advertise the product by covering

backs of built-in units with special signs in one of several new apartment constructions in New York City, it was stated. Signs also protect backs of the through-the-wall air conditioners from falling plaster and

this is  
a room  
cooler ...

this is a  
COMPLETE  
Air Conditioner

**ACTIVATED CHARCOAL FILTRATION makes the difference!**

"Air Conditioning" is a lot more than just cooling. How about odors and stuffiness, tobacco smoke, airborne bacteria, smog or outside air contamination?

All these air conditioning problems are solved by fast action DACOR—(Disposable Activated Charcoal Odor Remover.)

- DACOR eliminates all room odors and stuffiness.
- DACOR traps dirt, pollen, even air-borne bacteria and viruses.
- DACOR eliminates smog, outside air pollution. Makes window unit almost independent of outside air.
- DACOR ends tobacco smell problem.
- DACOR makes window units more efficient, cuts operating cost.
- DACOR makes a complete air conditioner of window cooler.

## BARNEBEY-CHENEY COMPANY

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information  
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State \_\_\_\_\_

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☐ contractor

☐ mfg. rep.  
☐ eqpt. mfg.

## SHAFTS by MODERN

Shafts by Modern now power compressors for the leading lines of commercial refrigeration and air conditioning units. For precision SHAFTS, in quantity, consult us. Send blueprints for quotation.

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**Airtemp**  
DIVISION  
CHRYSLER CORP.

DAYTON 1, OHIO

Guaranteed by

**Chrysler**



## Central Conditioning Features Carrier's \$12 Million Expansion

SYRACUSE, N. Y.—Ground was broken June 11 for the new Administration and Research Center of Carrier Corp. at Thompson Rd., Town of DeWitt, the major project of the company's \$12 million expansion program in the Syracuse area.

William Bynum, Carrier president, was at the controls as a gold-painted scoop shovel burrowed into the earth.

Initial contracts totaling \$500,000 were announced for excavation, filling, piling, and other miscellaneous preparatory work. This covers the new administration and research buildings, a 180,000-sq. ft. addition to manufacturing facilities of the Unitary Equipment Div., and the 49-acre Carrier Recreation Center.

### LABORATORY BEING BUILT

Another major project in the Thompson Road expansion program — creation of Unitary Equipment Div. laboratories in Building TR4 — is well under way and expected to be in operation by late summer. This project has an estimated cost of about \$750,000.

"The Administration and Research Center, located adjacent to the main manufacturing buildings at Thompson Road, will be ultra modern. Center's total cost will run about \$5 million.

"The largest of the new structures will be the interconnected administration and research and development buildings on either side of a central service area. This will include the main entrance, a combination auditorium and exhibit hall, dining rooms, and cafeteria facilities.

### MODERN AIR CONDITIONED BUILDINGS GOING UP

"The administration building will have two stories and the others one. Construction will be of the most modern type with complete central conditioning.

"The auditorium and the research and development laboratory building will be windowless. An unusual feature will be the two solid concave walls of the auditorium which will be the focal point of the group."

When headquarters offices and central engineering are moved into the new Administration and Research Center from their present in-city location at Geddes Street, the latter will be used for combination of production, office, service, and warehousing.

## Lau Ups Sales 10% In First 5 Months

DAYTON — Despite a slight drop in sales during the latter part of May and the first part of June due to unseasonable weather, sales of Lau Blower Co. are up 10% for the first five months of 1956.

Harold W. Faulkender, president, reported the figures to 20 sales representatives from all parts of the country attending a two-day blower conference.

Faulkender said he is very optimistic about the future and that the company's residential fan wholesale distributors and retail dealers seem optimistic, too.

Faulkender noted that the company had voluntarily increased its inventories of blowers to take care of anticipated demand later in the year.

He said that the company's

top model in household electric fans, retailing for \$79.95, is the current best seller in the 1956 fan line. This model is available in four colors and features a thermostatic control, safety pilot light, three speeds, and electrically reversible control.

Faulkender said the company's plants in Azusa, Calif., and Kitchener, Ont., Can., had their best months to date in May. Indications are that production in Kitchener may have to be increased by 30% in 1957.

### Hutchins, Ratliff Named

DALLAS — Two new wholesale zone managers of Carrier-Bock Corp. have been appointed, according to Irving Bock, president.

The new managers are John Hutchins and Leslie Ratliff. Hutchins is a former Dallas builder and developer. Ratliff has been in the air conditioning field for the past four years.



EIGHT Wisconsin Telephone Co. maintenance supervisors are shown grouped around an air conditioning unit while they learned to evaluate equipment at a recent five-day air conditioning school conducted by Airtemp.

## Telephone Co. Men Taught Cooling

DAYTON—From Milwaukee, Co. training supervisor stated that his company is using an increased amount of cooling.

"Therefore," he added, "our maintenance heads need a full amount of air conditioning knowledge so that they will be able to work more closely with installing contractors and so that they will be able to evaluate equipment."

Visiting the Airtemp plant, H. A. Stein, Wisconsin Telephone

## MUELLER BRASS CO.

cavalcade of champions  
the best performers in the refrigeration  
and air conditioning league

Real champions in their field are Streamline refrigeration and air conditioning products... you'll give them the best score for performance in your installations, too!

liquid indicators

copper tubing

diaphragm line valves

These new Mueller Brass Co. Linemaster diaphragm line valves are No. 1 in the country. With their tough Nylon seating discs and unique triple-diaphragms they'll give you the kind of performance you expect of a champion.

Clean, bright Streamline copper tubing is right down your alley. In coils or straight lengths, it's easy to handle, and ready to roll.

You won't ever be stymied about liquid level when you use these Streamline Liquid Indicators: a quick glance tells you of refrigerant shortage or restriction in the line.

You can't tell the players without a program. Get your 1956 Streamline Roster today! We'll include a complete major and top minor league baseball schedule, too.

MUELLER BRASS CO. PORT HURON 9, MICHIGAN

Increase COOLING TOWER EFFICIENCY With

ASPIR-JET

Aspir-Jet, the new spray nozzle, increases efficiency of cooling towers by increasing water break-up and improving water distribution. This is accomplished by the Aspir-Jet unique design which atomizes the water with as little as one-half pound nozzle pressure.

Formed of butyrate plastic, Aspir-Jets last longer because they do not corrode. Thousands already in use are giving better cooling even with lower than normal pressures.

• Available through Refrigeration and Air Conditioning Wholesalers.

Manufacturers & Refrigeration Wholesalers: If you are not now using or stocking this outstanding new product, wire or write

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Time

by  
Jimmy  
Hatlo



## Motivation Research Confirms Ford and Cadillac Hunches

Out Grand River Ave. in Detroit a dealer in room air conditioners, television sets, and washing machines has closed up shop. However, he had a sense of humor, because this sign appears in a window of his vacant store:

"WE UNDERSOLD EVERYBODY."

That's eloquent testimony to the truth of what follows here.

**Customers want an emotional kick** whenever they buy anything from ten dollars worth of groceries to a thousand dollars worth of home air conditioning, or to a million dollars in advertising, advises Pierre Martineau, research director for *The Chicago Tribune*. Obviously price-cutting isn't the only, or even a good, way of getting and keeping customers.

Every corporation, and each product, should present something more than logical usefulness or low price, he adds. What is that extra? *Personality*.

**And a recent article** in *Nation's Business* seconds that motion. This interesting theory is based on recent findings by that new breed of scientists, motivation researchers.

"Personality involves consumers' feelings toward an impersonal product—and the company which produces and sells it. If that company or product is identified with a famous *person* (example: Thos. Edison and electricity; George Eastman and cameras; Henry Ford and autos) it is likely to be successful.

"Consumers think of a new home, suit of clothes, or a woman's crazy hat in terms of glamor, excitement, escape from monotony, relief from tension or other psychological needs. Among the latter are *identification* with an interesting person who symbolizes the product they buy.

"**Today we're wild** about illusions," Martineau adds. "We drink vodka instead of whiskey because it seems more romantic. Detroit's auto makers capture a tremendous share of buyers' dollars because their new models stress color and style and imagination."

Parenthetically, it might be interjected that Cadillac motor cars have been sold on a "personality" basis (buyers gain prestige by associating themselves with a Cadillac) long enough to prove that this theory is practical.

And Henry Ford was a great one for personal publicity. So was Walter Chrysler.

"Yet, many businesses which persist in harping on temporary P & L statements

instead of building for the future, go for gimmicks and shot-in-the-arm merchandising tactics, instead of building a personality appeal for their product, or capitalizing on a *person* in their organization who has become a symbol. They don't understand the true psychological reasons behind customer attitudes.

"The latter are *personal*."

Recent wholesale shift of families to suburbs is a striking example of a social and economic revolution which hasn't been appreciated fully by some marketing strategists.

**When motivation research** scientists discovered the real reasons for this suburban craze, it was found that young people wanted to break away from their parents, and that housewives wanted to escape from loneliness, and get together with groups of their own sort.

"They all wanted *adventure* and *new friends*, and identification with people they admire," the study continues.

Ours is an age of spending—not saving. We spend to achieve a sense of belonging, and to move into a higher orbit of association with people and products which have recognition and approval, according to the motivation researchers.

As a result, buying habits are changing to fit new customs. Nearly everybody lives on credit these days, so as to achieve a kinship with those persons and things which symbolize our aspirations for a more interesting life.

"It's up to merchandisers to create and publicize a business *personality* that is appealing to new customers and which will hold old clients," conclude the motivation researchers, "if they expect to survive in this highly competitive age."

"**Study the personality** of your business, and appreciate what people think of this personality and how it affects them inwardly," Martineau suggests.

On the imagination invoked in the minds of consumers by the personality inherent in your product (or the person who is identified favorably with your product) may rest your chances for getting more business.

Price isn't nearly so important as emotional response. Grandpa used to stare at the banker's fine carriage with awe and respect. Today his grandsons say: "There, by the grace of God and the finance company, go I."

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"I have always felt that whatever the Divine Providence permitted to occur I was not too proud to report. The people are not served by pussyfooting, or by that sort of journalism in which nobody will ask who is the editor of a paper or the writer of an article, and nobody will care."—Charles A. Dana.



### 'DOPE' DEVOTEE DESIRES DIAMOND-DIAPER DATA

Kelvinator Sales Corp. Ltd.  
Toronto 14, Ont., Can.

Editor:

We are yearly subscribers to your very interesting newspaper. In one of your spring issues in the "Inside Dope" column there was a baseball story instructing baseball fathers how to fold a baby diaper reading something like "take home plate and bring it over to second base."

I would appreciate if you could send me another copy of this issue as we have a baseball fanatic friend who is about to

become a new father. We would like to frame same and present it to him.

(MRS.) JANE STREMECKI

Answer: Here it is:

Glamorous Mrs. Paul Trout, mother of five, taught "ol' Diz" how to swaddle a baby. She laid out the diaper in the form of a baseball diamond.

"You take the batter's position at the low end of the cloth; then bring center field down to home plate. Put the baby in the pitcher's box. Bring first base, third base, and home plate together, and you're in, Buster.

"P. S. If your game is rained out, start all over."

To act with common sense, according to the moment, is the best wisdom . . . and the best philosophy, to do one's duties, to take the world as it comes, submit respectfully to one's lot, bless the goodness that has given us so much happiness with it.—HORACE WALPOLE.

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## Cool (70°) Pullets Produce Better Eggs, Researchers Find

ROANOKE, Va. — Controlled temperatures in the laying house will help maintain egg quality in the summer months, according to experiments reported here recently at the annual meeting of the American Society of Agricultural Engineers.

The research was reported by Clayton C. Brunson, C. W. Pope, and A. B. Watts, poultry industry department, Louisiana Agricultural Experiment Station.

In their test, one group of pullets was housed in a conventional type laying house and another group was housed in a room in which the temperature was kept at 70° F. Eggs laid by pullets housed in the controlled-temperature room were higher in all quality measurements during the hot months than eggs laid by pullets that were exposed to changing temperatures.

The researchers also found that the length of time the hen has been in production has more influence on interior quality of the egg than the season of the year.

In one phase of the experiment pullets that came into production at different seasons were studied.

One group began producing around Nov. 1, another group began around June 1. The interior egg quality of each group decreased throughout the experiment. Season of the year had more influence on egg quality and weight which were lowest during the summer and early fall when temperatures were above an average high of 70° F.

## 100% of Las Vegas RACCA Sign Rules-of-Practice Cards, Return to FTC

LAS VEGAS, Nev.—The local Refrigeration & Air Conditioning Contractors Association recently supplied local newspapers with a press release announcing that all its members have signed and returned to the Federal Trade Commission rules-of-practice compliance cards.

Signing and returning of the cards signifies acceptance of the trade practice rules for the refrigeration and/or air conditioning contracting industries, it is pointed out.

## Superior Judge Rules

## Los Angeles Area Supermarkets Can Sell Frozen Pre-Packaged Meats, Fish, Poultry

LOS ANGELES — Operators of 120 supermarkets in this area have won the right to continue sale of frozen and pre-packaged fresh meats, poultry, and fish in spite of current union contracts.

Superior Judge Philip H. Richards, in a five-page opinion, found that labor contract clauses now requiring that all such products be cut and wrapped in the market where they are sold are in restraint of trade and violate both California and Federal anti-trust laws, it was reported. The issue appears headed for a long battle through higher courts.

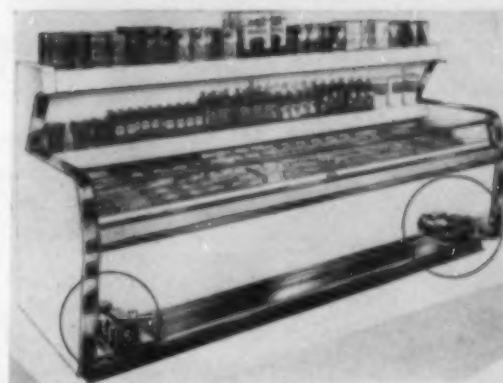
However, the jurist declined to issue an injunction asked for by the supermarket operators to prevent four locals of the Amalgamated Meat Cutters &

Butcher Workmen of North America, AFL-CIO, from calling a strike because of the growing practice of dispensing pre-packaged meats.

Judge Richards also refused to enjoin the market operators from breaching the agreements, holding that the contracts themselves contain clauses providing for renegotiation of any provision held to be illegal. The locals had sought such an injunction.

A union spokesman noted the issues were significant enough so that either an appeal would be made to the appellate court and higher bodies, or the operators would be asked to open negotiations on what has been described by Judge Richards as an illegal clause.

## Commercial Refrigeration



## C. V. Hill Case Has 2 Refrigeration Systems

TRENTON, N. J.—A new frozen foods and ice cream case with two complete refrigeration systems was announced recently by the C. V. Hill & Co. here.

The company claimed that the capacity of the model 355-XZK is greater because the two small units require less space than one larger unit and produce less noise and heat.

The company adds that one

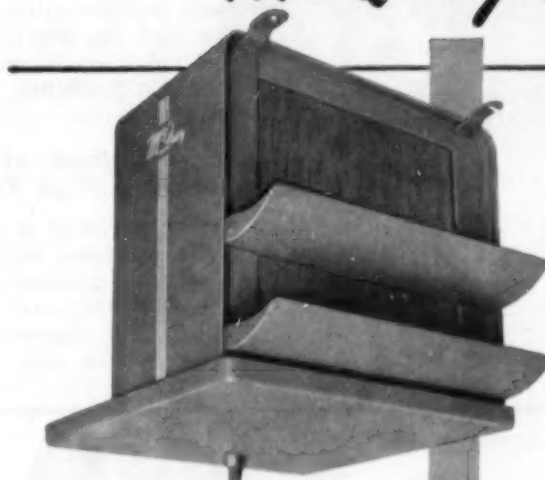
of the systems alone will maintain below freezing temperatures, an advantage in case one of the refrigeration units breaks down.

Entire front of the fixture is hinged to permit accessibility to working parts for service and maintenance.

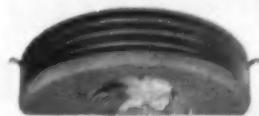
The unit is self-contained, with automatic defrost. No plumbing is required.

WHEN THE CALL COMES...

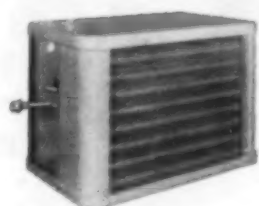
you're ready with  
**McQuay Unit Coolers**



PACEMAKER UNIT COOLER



RADIAL UNIT COOLER



TWO-WAY UNIT COOLER



PANEL TYPE CHILLATOR

**PACEMAKER UNIT COOLERS** provide efficient, low-cost cooling for walk-in coolers where temperatures above 35° F. are required. Compact and smartly designed, these units are available in capacities from 300 to 2300 BTU (basic refrigeration rating). Units are equipped with mastic coated drain pan, louvers and special hangers for easy installation. The copper tube, aluminum fin coil is housed in a continuous galvanized steel cabinet, bonderized and painted. Pacemakers are quality built for long life, service-free operation and are U.L. approved.

**RADIAL UNIT COOLER**—styled for ceiling mounting, McQuay radial designed unit coolers are compact to allow for greater headroom. Radial design insures even distribution of air throughout the room. Units are U.L. approved.

**TWO-WAY UNIT COOLER**—For efficient cooling of back bars, novelty boxes, beverage coolers and other limited space applications, McQuay Two-Way Unit Coolers provide a double discharge of cooled air. Units may be wall or ceiling mounted and are U. L. approved.

**PANEL TYPE CHILLATORS** for reach-in cabinets, florist boxes and small, low ceiling walk-ins especially adaptable for wall mounting in self-contained prefabricated coolers.

See Your McQuay Wholesaler!  
Prompt delivery from four strategically located warehouses.

**McQuay Inc.**

1600 BROADWAY N. E., MINNEAPOLIS 13, MINN.

HEATING • AIR CONDITIONING • REFRIGERATION



## ROTARY SEAL

## Replacement Units

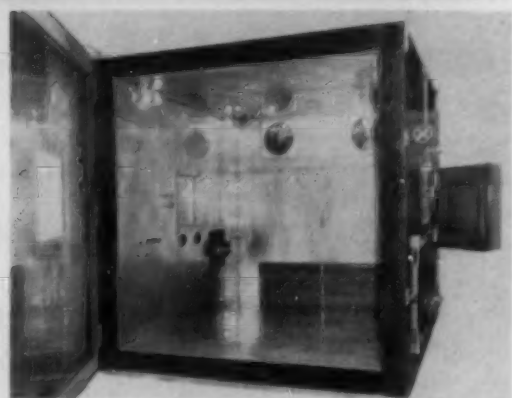
Available in a wide size range for Commercial, Semi-Commercial, Air Conditioning and Home Refrigerators.

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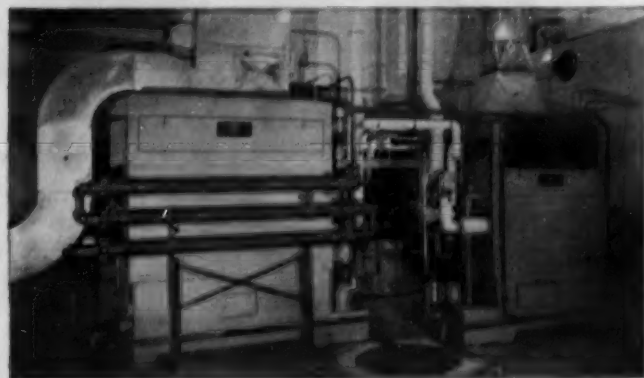
HINGED 20 by 20-in. access door is located beside the window on one 8 by 10-ft. side of this new Tenney extremely low temperature environmental test chamber built for an aircraft manufacturer.

## Access Door Cuts Temperature Change On -100° to 220° Aircraft Test Chamber

UNION CITY, N. J.—Tenney environmental test chamber for Engineering, Inc. here, has just a leading aircraft manufacturer, completed the construction of The aircraft manufacturer was an extremely low-temperature faced with the problem of mak-

## This NEW METHOD DRIES AIR

PRECISELY AS YOU WANT IT



### NIAGARA CONTROLLED HUMIDITY AIR CONDITIONING

This method removes moisture from air by contact with a liquid in a small spray chamber. The liquid spray contact temperature and the absorbent concentration, factors that are easily and positively controlled, determine exactly the amount of moisture remaining in the leaving air. Heating or cooling is done as a separate function.

#### The Niagara's Controlled Humidity Method using HYGROL moisture-absorbent liquid is

Best and most effective because . . . it removes moisture as a separate function from cooling or heating and so gives a precise result constantly and always. Niagara machines using liquid contact means of drying air have given over 20 years of service.

Most reliable because . . . the absorbent is continuously re-concentrated automatically. No moisture-sensitive instruments are required to control your conditions.

Most flexible because . . . you can obtain any condition at will and hold it as long as you wish in either continuous production, testing or storage.

Easiest to take care of because . . . the apparatus is simple, parts are accessible, controls are trustworthy.

Most compact, taking less space for installation.

Inexpensive to operate because . . . no re-heat is needed to obtain the relative humidity you wish in normal temperature ranges and frequently no refrigeration is used to remove moisture.

The cleanest because . . . no solids, salts or solutions of solids are used and there are no corrosive or reactive substances.

For complete information write

### NIAGARA BLOWER COMPANY

Over 35 Years of Service in Industrial Air Engineering  
Dept. AC, 405 Lexington Ave. New York 17, N. Y.

Sales Engineers in Principal Cities of U. S. and Canada

ing constant interior adjustments without allowing sharp environmental temperature changes which occurred whenever the major chamber door was opened.

Tenney engineers met this problem with the designing of a special, hinged 20 by 20-in. access door located beside the window in one 8 by 10-ft. side. This door may be opened to allow manual instrument changes and adjustments without completely dissipating the environmental temperature condition.

A 40-hp. drive shaft penetrating one side of the chamber is capable of producing from 750 to 4,500 r.p.m. All automatic programming instrumentation allows for complete pre-setting and pre-selection—reduces technical operation and observation hours to a minimum.

This unique low-temperature test chamber has a temperature range of -100° F. to 220° F. ( $\pm 2^\circ$  F.); has a relative humidity range of 20% to 95%, 35° F. to 180° F., 35° F. minimum dew point; has a special operation of 5% to 160° F.; has a heat dissipation load of 30,000 B.t.u./hr. at -70° F. and/or 3,000 B.t.u./hr. at -100° F.

The physical interior dimensions of this unit are: 8 ft. wide by 8 ft. high by 10 ft. deep. Provision was made for 200 lbs./sq. ft. floor loading. Two 3-in. ports were put under each window on the long side.

### Evaporative, Aerial Combined Unit Cools Gas, Oil, Gas Vapor

LOS ANGELES—Sam Nelson, manager, Industrial Div., Drayer-Hanson, recently announced delivery of an "Aerovap" unit cooler to Union Oil Co.'s Santa Maria Valley Absorption Plant, Santa Maria, Calif.

The massive unit, measuring over-all 11 ft. wide by 20 ft. long by 15 ft. high, is designed to handle three phases of cooling for the absorption plant, Nelson said.

It will provide final cooling for gas to high-pressure absorber; additional (or final) cooling for lean absorption oil, and, final cooling for raw gasoline vapors. The Aerovap is equipped to handle approximately 10,000,000 B.t.u.

### Technical Study Shows

## 2-Refrigerant Cascade Units Have Advantages of Less Hp., Space, Cost

DETROIT—The Wolverine Tube "Diamond Key Award" was presented this year to D. J. Missimer, announces John M. Dumser, director of sales for Wolverine Tube, Div. of Calumet & Hecla, Inc.

Awarded annually since 1940 for outstanding technical papers in the refrigeration field, the 1956 Wolverine Diamond Key was bestowed upon Missimer of Pacific Refrigeration Co., Los Angeles, for his outstanding article "Cascade Refrigeration Systems for Ultra-Low Temperatures."

The following is a digest of Missimer's paper.

Cascade systems using two different refrigerants have advantages of less horsepower, space, and cost than compound systems for producing air temperatures from 70° to -70° F., according to D. J. Missimer of Pacific Refrigeration Co.

Citing a specific example at a meeting of the American Society of Refrigerating Engineers, Missimer said that a two-stage "Freon-22" system for the above range required 22½ hp. compared with 12½ hp. for a "Kulene-131"/"Freon-12" cascade system.

"The floor space was 20% less with the cascade system and the cost approximately 18% less," Missimer also explained.

### Refrigerant 1 Condenses Refrigerant 2

The cascade system employs one refrigerant circuit to condense the refrigerant of a second circuit operating at a lower temperature.

Missimer also took issue with the "general belief that cascade systems lack flexibility." Proper design and the right combination of refrigerants can achieve "reasonable flexibility," he contends.

### Outlines Methods of Obtaining High Temp

Various methods of obtaining high temperatures with cascade systems were outlined by Missimer. Among these are:

1. Limiting maximum evaporator pressures and operating

with a high temperature differential across the evaporator; 2. operating with a high evaporator temperature and preventing overload of the low stage compressor by various means, or 3. using the high stage only connected to a secondary evaporator.

### Exercise Care To Prevent Motor Heating

Discussing various components of a cascade system, Missimer pointed out that "if a hermetic compressor of the refrigerant cooled type is used, care should be exercised to prevent inadequate motor cooling due to rarified suction vapor and excessive discharge temperatures, and the capacity must allow for additional superheating."

Refrigerant metering device is usually a gas-charged thermostatic expansion valve carefully sized to prevent "hunting" at the lowest evaporator temperatures.

### Electric Control System Can Be Simple

"The electric control system can be quite simple," Missimer says. "The high stage need only have the standard high pressure cut-out if water or evaporatively cooled, and is controlled by a reverse acting high pressure control connected to the discharge of the low stage," he added.

For control of the low stage, a high pressure cut-out and frequently a reverse acting low pressure switch and liquid line solenoid valve are used as protective devices while temperature control is commonly achieved by on-off cycling of the low stage compressor and liquid line solenoid if used.

As for which refrigerant to use in the low stage, Missimer said that "Freon-13" works well in the range of 0° to -135° while "Kulene-131" could be used in the 60° to 100° F. range.

Relative costs of these systems "are frequently the determining factors," Missimer commented.

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## Tower's Ability To Cool Water Depends on Difference Between Dry, Wet-Bulb Temperature, Expert Explains

E. LANSING, Mich. — The ability of a cooling tower to cool water depends on the difference between the dry-bulb and wet-bulb temperatures, R. L. McFadin of the Marley Co. informed a group of heating dealers attending a conference on forced warm air here recently.

The conference was an educational service sponsored jointly by the National Warm Air Heating & Air Conditioning Association and Michigan State university.

McFadin gave the students some basic data on evaporative cooling as a means of conserving water for air conditioning.

He pointed out that while 1 lb. of water dissipates 1,000 B.t.u. of heat, the amount of heat the air can pick up depends on the wet-bulb temperature.

### COOLING TOWER CANNOT REMOVE HEAT AT LESS THAN WET-BULB TEMPERATURE

A cooling tower cannot remove heat at less than the wet-bulb temperature, he said.

If the tower was 100% efficient, it would reduce the air to the wet-bulb temperature. But the tower does not do that, normally.

### COOLING RANGE IS DIFFERENCE BETWEEN ENTERING, LEAVING WATER

The cooling range represents the difference between the temperature of the entering and leaving water. The difference between the temperature of the water leaving the tower and the wet-bulb temperature of the air is called the "approach."

Thus if the wet-bulb temperature of the air is 75° and entering water at 100° F. is cooled to 85° F., the difference between 100 and 85 is called the range and the difference between 85 and 75 is called the approach.

"The closer the approach, the easier it is for the cooling tower to cool the water," McFadin declared.

He pointed out that air at 75° F. w.b. will pick up double the heat with a 1° rise in temperature as air at 40° w.b. He asserted that air at 40° w.b. contains 15.2 B.t.u. per lb. while air at 41° w.b. contains 15.67 B.t.u. per lb. Air at 75° contains 38.55 B.t.u. per lb. and at 76° contains 39.5 B.t.u. per lb.

### SMALLER UNITS DO SAME COOLING JOB AT HIGHER TEMPERATURES

"Thus at higher temperature levels, it takes smaller equipment to do the same cooling job," he said.

McFadin noted that there are two basic types of cooling towers—atmospheric and mechanical draft. The atmospheric tower, he said, has an efficiency of only 45 to 50%, based on a 5 m.p.h. wind. But on still days, the temperature of the water rises sharply, thus reducing its cooling capacity.

Mechanical draft towers create their own breeze by mechanically driven fans, he explained. A forced-draft tower has a fan at the side to blow air over the water. An induced draft tower, however, has the

fan at the top to pull the air through the tower from the bottom.

The induced draft tower can discharge the air at a higher velocity, thus reducing the amount of saturated air sucked back through the tower, he noted.

Another type of induced draft tower is the crossflow type. In this type air is drawn in from the sides and blown out the top. It has several advantages, he claimed.

### CHARACTERISTICS OF CROSS FLOW TYPE TOWER

The pumping head pressure is generally lower than in other types of towers. Access to the tower for cleaning and maintenance is easier. And the tower

can handle larger quantities of air at lower fan horsepower.

Cooling towers are rated, he said, at 250 B.t.u. per minute per ton of refrigeration. This allows 200 B.t.u. per minute for the refrigeration and 50 B.t.u. per minute for the heat of compression.

When "Freon" refrigerants are used, McFadin recommended that 3 g.p.m. of water should flow through the tower. For other refrigerants, this should be stepped up to 4 to 6 g.p.m.

These rates are based on electric motor drive, he cautioned. For gas or steam absorption systems, the amount of heat to be dissipated is approximately doubled.

Make-up water requirements in cooling towers, he said, are

based on the following:

An evaporation loss of 1% for every 10° F. of cooling.

Drift loss of less than .2 of 1%.

Bleed off of .3 to .5 of 1%.

This much water must be replaced in the system he further noted.

Cooling towers are filled with wood slats, he noted, to give the water the maximum contact with the air. Wood is used, he explained, because it lasts longer and requires much less maintenance than other construction materials.

### Candler Bldg. To Get More Cooling

ATLANTA—A \$292,000 supplementary building permit for air conditioning the Candler building has been issued by Atlanta building inspector William R. Wofford. A \$500,000 permit was issued for the job in June, 1955.

## Air Conditioning

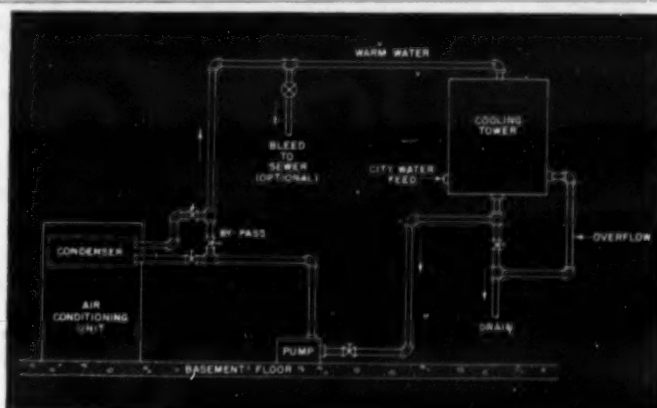
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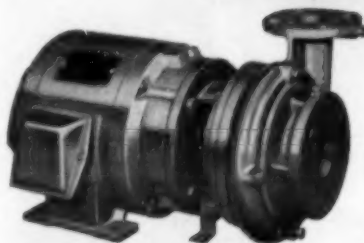


## QUIETER PUMPS

FOR COOLING  
TOWER  
APPLICATIONS

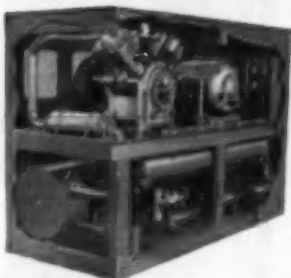


**B&G 1522 CENTRIFUGAL PUMPS**



### B&G SERIES 1531-B CENTRIFUGAL PUMPS

Equipped with self-lubricating, leak-proof "Remite" Seal. Super-finished shaft oversized for minimum deflection. Impeller is of sound hydraulic design, with balancing ring and relief holes to reduce thrust. Heavy duty ball bearing motor. Capacities to 1200 GPM, heads to 420 ft. Many sizes carried in factory stock.



### B&G PACKAGE LIQUID COOLER

A complete cooling unit for homes, apartments, commercial and industrial buildings. Low pressure drop through evaporator—non-recycling pump down—integrated electrical control system—complete wiring—are a few of many outstanding features. Send for Bulletin HB-755.

Get rid of pump noise troubles in your cooling installations...next time install a B&G 1522!

This pump is *really quiet*...because both pump and motor are equipped with long bronze sleeve bearings...and because of the noise-dampening flexible spring-type coupler.

The B&G 1522 offers an impressive number of other features for dependable, low-cost operation. The "Remite" Mechanical Seal, for example, ends leakage troubles. It's self-lubricating—harder than glass—wear-proof. The impeller is dynamically balanced for smooth, vibrationless operation...the entire bearing bracket assembly, including shaft and sleeve bearing, is interchangeable. Servicing is simple—the 1522 separates into three parts.

All these plus values cost no more—the B&G 1522 Pump is *competitively priced*! It is available as an all-iron, bronze-fitted, all-bronze or a stainless steel unit, with capacities to 150 GPM, heads to 115 ft. Available in common sizes from factory stock. Send for Catalog.



Send for your free copy of the B&G Six Step Manual for Designing Cooling Tower Systems.



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## What's New

### Frigidaire Adds 27, 44 Cu. Ft. Reach-Ins

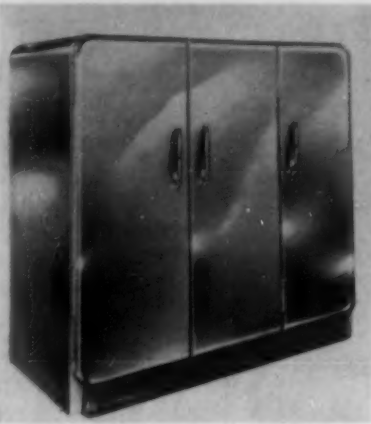
KEY NO. F-720

DAYTON—Two new stainless steel models have been added to the reach-in refrigerator line of the Frigidaire Div. of General Motors.

The new units have storage capacities of 27 and 44 cu. ft., respectively.

This brings to seven the number of Frigidaire reach-in models available. They range in size from 17 to 62 cu. ft. Five of the models are available in white exterior Dulux enamel. Four of them have forced air systems. One features an ice cube maker and frozen food storage compartment.

The stainless steel models also feature "Flowing-Cold" cooling systems. They are adaptable for



keeping biologicals, beverages, and salads, as well as normal food storage and other uses.

### 1½ Cu. Ft. Absorption Refrigerator Offered



KEY NO. F-721

NEW YORK CITY—A "Little Giant" 1½-cu. ft. refrigerator was offered here recently by Foremost Commodities Corp.

Designed for offices, labora-

tories, mobile homes, motels, boats, home bars, hotels, kitchenettes, cottages, and physicians' and dentists' offices, the unit is said to have low electricity consumption and can be hung on the wall.

Features include fingertip door handle control, improved thermostat, all-steel cabinet, adaptable to a.c. or d.c. on all voltages from 24 to 280 v., according to the manufacturer.

The treated aluminum interior is acid and stain proof, it was added. The cooling unit functions on the absorption principle without a motor and is noiseless. It carries a five-year warranty.

Containing an ice cube freezer, tray, and drip pan, the Little Giant has a one-year warranty on all electric parts, the company said. It also is available in 1½ and 3-cu. ft. gas-heated models for butane operation.



### Frigid Igloo Develops Bakery Display Case

KEY NO. F-722

YONKERS, N. Y.—Frigid Igloo Mfg. Corp. here recently introduced a completely automatic bakery display case said to have great capacity in the "least space."

Full-vision doors cover the front, service entrance from the rear. The case has stainless steel exterior, white interior containing 30 cu. ft. in the freezer section. There are three 18 by 26-in. pans and six 9 by 26-in. pans for ice cream cakes and frozen desserts.

The high temperature section is for whipped cream and whipped novelties, it was added. Available in one size only, model CBC 73, the unit is 73 by 35½ by 76 in.

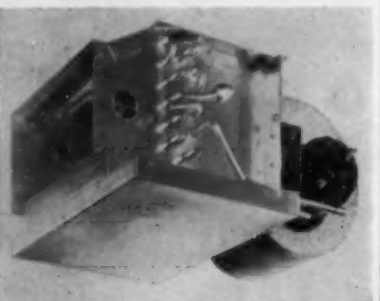


### Armstrong Introduces 3-In. Tube Cutter

KEY NO. F-723

HARTFORD, Conn.—A new 3-in. tubing cutter for copper, brass, and aluminum tube from ⅝ to 3½ in. was recently added to the Armstrong line of pipe fitters' hand tools by Capewell Mfg. Co. here.

This new tube cutter weighs 2½ lbs. and is said to easily cut 3-in. tubing with almost no burr. The D801 features treated tool steel cutting wheel in malleable iron mount, double steel rollers, steel scroll screw with knurled handle, and heat treated aluminum alloy body to reduce weight.



### Krack Remote Type Transom Air Conditioner

- Ideal for hotel, motel, and hospital rooms, offices, apartments, homes and other multi-room units
- Quiet centrifugal fan
- Heavy gauge aluminum housing

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25th Anniversary in Refrigeration and Air Conditioning



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### Hot-Cold Register Mounts On Wall or Ceiling

KEY NO. F-724

MARSHALL, Mich.—A new "Hot-Cold" air register is now offered for air conditioning and heating installations by Lynn Corp. here.

Constructed of heavy-gauge steel, it is said to be adaptable to floor, wall, and ceiling mounting. It features modern design with silver hammertone finish, it was noted.

### Non-Rupture Disc Stops Excessive Overpressure

KEY NO. F-725

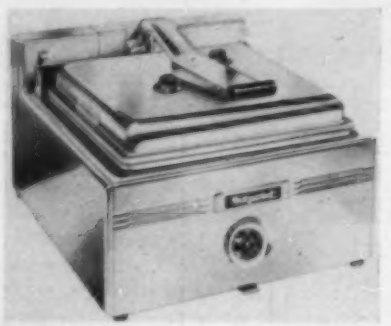
KANSAS CITY, Mo.—Black, Sivalls & Bryson, Inc. here, manufacturer of safety heads for the

protection of pressure systems against excessive overpressure, announces a new-type rupture disc.

The device is said to extend the advantage of safety head protection to many installations now operating under pressure, temperature, and corrosive conditions too severe for conventional type discs.

"The rupture disc is the 'heart' of the safety head assembly, made from a variety of thin ductile metals selected on the basis of operating requirements," the company said.

"The new D and DV rupture disc extends the range for high temperature applications, provides maximum service under pulsating or reversing pressure conditions, and permits closer operation to rupture pressure.



### Hotpoint 'Rocket' Cooks 360 Burgers per Hour

KEY NO. F-726

CHICAGO—Hotpoint Co.'s new 18 by 20-in. "Rocket" griddle-grill turns out 360 4-oz. hamburgers an hour, according to the manufacturer.

With separate, automatic controls for top and bottom grids, the machine can be used either as a grill or, by shutting off top heat controls and keeping upper grid raised, it can be used as a conventional griddle, the firm stated.

A number of types of grilled foods can be cooked on the chrome-plated steel griddle-grill. Capacity is 16 hamburgers or nine toasted sandwiches per load.

### BEACH-RUSS Portable VACUUM PUMPS



Model O Single-Stage Pump—1 mm. vacuum, blank flange, 1 CFM, ¼ HP, weight 48 lbs.

Model A Two-Stage Pump—1/10 mm. vacuum, blank flange, 2.5 CFM, ½ HP, weight 80 lbs.

Write for prices and data.

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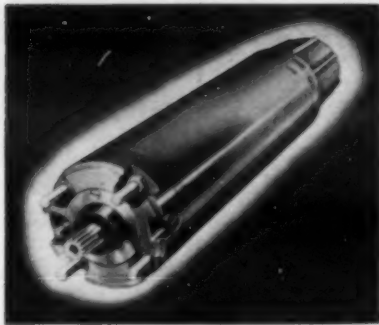
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## Submersible Deep Well Pump Motor Developed

—KEY NO. F-727—

SCHENECTADY, N. Y.—A new submersible pump motor designed for deep well pumping has been developed by General Electric Co. general purpose component motor department.

Specially-designed water-lubricated bearings are unit features, along with a propylene glycol-water mixture filling to prevent freezing during shipment. It is factory sealed, the company said.

Water-glycol solution is kept inside the motor with aid of a spring. This also keeps foreign matter out, according to the firm. In case of water entry, a specially designed sand slinger operates to keep lubricating water clean.

An "encapsulation" process encases field windings in epoxy resin which molds the winding into a solid piece. Resin is nontoxic, is not susceptible to aging or moisture deterioration, and does not affect winding or well water.

No ground level protection is necessary. All water pipes are installed below the frost line.



## Corrosion-Resistant Ducts Introduced

—KEY NO. F-728—

WILMINGTON, Del. — Have Industries, Inc. here recently introduced several different ducts, hoods, and fittings for corrosion resistant service, the manufacturer announced.

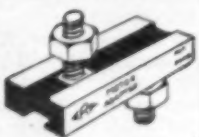
Made entirely of polyester glass reinforced plastic, the units are lightweight, tough, and have high strength, the company said. It is claimed they offer chemical resistance to acid and other conditions.

A wide range of standard fittings and ducts are offered. Any size and shape of duct, hood, or stack can be produced.

## MOTOR BASE ADAPTERS Sell Many Other Items

Keep them in stock. Servicemen will pick up adapters and motors, carry them in their cars, and complete service on the job in one call. Eliminates delay of having motors away for rebuilding. Adapters are easy to install, fit any base. No motor shaft too long or too short. They also bring you more sales in motors, belts, pulleys, controls, etc.

**SIZES FOR 1/2 to 3 H.P. Inclusive**  
Engineering Research Associates, Inc.  
3475 East Nine-Mile Road  
Hazel Park, Michigan



## Madden Offers Tube Piercing Valve

—KEY NO. F-729—

AURORA, Ill. — Madden Brass Products Co. recently introduced a tube piercing valve for larger size tubing.

HP-68, designed for heavy duty, pierces 3/8, 1/2, and 5/8-in. o.d. tube, the company said. It features a one-piece brass body made from extruded bar, and a recessed sealing gasket that can't slip or fall out, the firm stated.

Tubes are automatically centered for piercing and sealing. The unit can be installed in any position on copper, aluminum, or thin wall brass tube wherever desired, according to the manufacturer. There is no need to disconnect or shut off supply, it was added.



## Plastic Caps Protect Threads, Flare Faces

—KEY NO. F-7210—

TONAWANDA, N. Y.—Clover Industries, Inc. has developed a polyethylene, transparent, self-sealing plastic cap to protect threads and flare face of A.N. and S.A.E. fittings during storage or shipment.

A self-sealing tapered ring is molded on the inside of the cap to fit the inside diameter of the fitting and make a tight inner seal, the company said. Cap corner is square to provide a cushioning effect and protect the flare face. Side wall is slightly tapered and sized to make a push fit against the fitting threads.

## Rivet Cooler Needs Only Electrical Connection

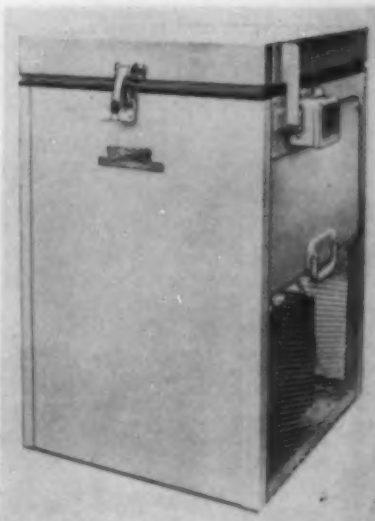
—KEY NO. F-7211—

INDIANAPOLIS — Webber Engineering Corp. here recently introduced a 1-cu. ft. portable rivet cooler which requires only connection to electrical service to put in operation, it was announced.

Weighing 68 lbs., the rivet cooler will hold 25 aluminum canisters with perforated bottoms on the cadmium plated rack of the storage compartment. Each canister will hold 1 lb. of 17 ST or 24 ST aluminum rivets, according to the firm.

Model WE-1-40 has a maximum range of -50° F. Rivet compartment measures 11 1/2 by 11 1/2 by 12 1/2 in. Outside dimensions of the entire unit are 21 by 21 by 28 in.

A mechanical safety locking device which prevents access to rivets in cooler if storage chamber temperature rises to -20° F., it was noted. A baffle to the chamber prevents loss of temperature



when the lid is opened, the unit has temperature control with range from 120° to -50° F. and a foot treadle to actuate the lid. A heavy-duty hermetic compressor is included, as is a non-hygroscopic insulation and an indicating thermometer to show interior temperature.

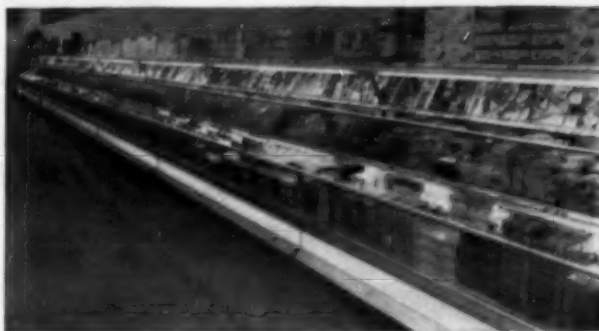
# 404 feet of McCRAY Cases are MOVING MERCHANDISE in this new GATEWAY Food Basket



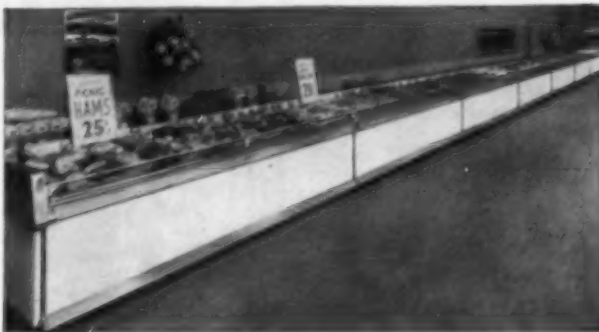
Convenient low shopping height, swept-back front and other sales-impelling features of McCray cases, brought crowds of customers to this new Gateway Supermarket from the day it was opened. McCray design draws shoppers to the merchandise, makes selection easy, spurs impulse sales.



Frozen Food Island Cases Really Sell



Mass Display of Dairy Products, All Within Easy Reach



Meat Department Has 77 1/2 ft. of Refrigerated Display



Frozen Food Department is Supplemented by Island Display Cases

"Because of the results we have been getting with McCray cases over the past three years we again chose McCray for our newest store," says Dudley H. Everson, President, Gateway Supermarkets, Louisville, Kentucky. "These McCray cases are doing a real job of moving merchandise. We are especially pleased with your new island type frozen food cases."

This fine installation includes 129 lineal feet of frozen food and ice cream cases. The McCray Distributor in Louisville provided the complete plan and layout for building and equipment. The McCray cases attract customers from a wide area. Sales-making display and easy-shopping features build steadily increasing volume.

McCray distributors have the equipment and the merchandising tools to do the best job for their customers and to insure the best profit for themselves. Some valuable territories are still open. If you're interested, drop us a line—it never hurts to ask.

65 Years of  
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Mail Coupon Today!





TELLING refrigeration representatives about his firm's refrigerant chemicals is George Schnier, sales manager of American Potash & Chemical Corp. Schnier uses chart to illustrate 170% rise in sales of company refrigeration products since World War II.

## Conferences, Plant Tour Helps Firm's Representatives Handle Refrigerants

LOS ANGELES—Area representatives for American Potash & Chemical Corp.'s refrigeration products came here recently from all parts of the United States for a four-day series of conferences and tours of plant facilities as an aid to their handling of the company's refrigerant chemicals.

The group was brought to Los Angeles as guests of the company.

Under the guidance of George Schnier, sales manager of the corporation's refrigeration de-

partment, and Bernard F. Nelson, California area sales representative for the department, the group visited company headquarters at Los Angeles, toured the main plant at Trona, Calif., and learned about American Potash & Chemical's research program at the company's Whittier, Calif., research laboratory.

Those who attended the conference included Thomas H. Hart, J. F. Burnett, and D. J. Dodds, Jr., all of Hart Engineering & Sales Co. in the southeast area; Leo J. Freitas,

F. F. Kennedy, and W. D. McDaniel, all of Leo J. Freitas Co., Inc., covering the southwest territory; C. C. Penn and O. C. Yates, of Northwest Factors, handling the northwest area; J. N. Marshall, of J. N. Marshall Co., Denver; R. B. Grisbrook of St. Louis; Allen B. Harvey from New York City; O. J. Kesti from Detroit; and George W. Wilson of Chicago.

Officially welcomed by Peter Colefax, president of American Potash & Chemical, the group attended a series of talks covering various aspects of the company's operations.

Among those who spoke were William J. F. Francis, vice president in charge of sales; George S. Wheaton, vice president, defense program; William M. Clines, western general sales manager; L. A. Adams, treasurer; Joseph C. Schumacher, director of research; A. F. Swain, sales manager of the Agricultural Chemicals Dept.; and Frank Radovich, western representative of Sales Development Dept.

Guest speakers included William A. Bours, assistant director of sales, Kinetic Chemicals Div. of E. I. du Pont de Nemours & Co., and Peter H. Askew, president of Thermal Products, Inc., at Los Angeles.

The first two days of the meeting were devoted to talks by American Potash & Chemical officials and to a visit to the company's main office.

On the third day, the group went to Trona.

## Clipboard Checkoff Keeps Dealer's Service, Salesmen Up On Operations

DENVER—The problem of keeping track of telephone calls, correspondence, and work orders for seven refrigeration and appliance servicemen, and as many salesmen, has been solved by a local Frigidaire dealer.

George Becker, of Becker and Pistol, has developed a system of using a clipboard for each man to keep him "up-to-the-minute" on all operations which affect him. The boards are hung on the office wall.

### ILL-WILL ENGENDERED WHEN CALLS ARE OVERLOOKED

"There are too many chances to engender ill will and lose sales when so many men are involved," Becker stated. "Particularly bad are overlooked service calls, adjustments, and deliveries on which the customer has depended.

"Loose notes, bulletin boards, slates, and message boards have too many drawbacks for our purpose."

Consequently, with the clipboard system, Becker and Pistol believes it has a convenient plan for relaying every message to the man concerned. Each call, as it comes in, is received by an office girl who jots down all particulars immediately, it was explained.

Then the information concerning a service operation, or a sale, is extracted to a file card under the proper heading. Next the original is placed on the appropriate employee's clipboard. Becker inspects the office file every evening.

### 'SIMPLE SYSTEM WORKS CONSISTENTLY WELL'

"It's a simple system, but one that works consistently well," Becker declared. "For example, every mechanic, upon returning from a service call, checks any new notes or in-

structions on his clipboard and is guided accordingly.

"Salesmen who have been out on a call, come back to find clearly defined information, then make new calls as soon as possible.

"By the day's end each clipboard should be cleared, indicating that everything has been taken care of. We compare the file cards with messages on the board and catch anything which might have been overlooked. This also checks the jobs ahead for each serviceman or salesman."

Becker and Pistol handles more than 50 appliance service calls each week, including those for refrigerators, home freezers, automatic washers, electric ranges, etc.

Since the clipboard system was put into effect, there has been no instance of a customer's wants being overlooked because a note was lost or forgotten, Becker said.

## Sporlan Names Watts Field Representative

ST. LOUIS—Floyd B. Watts of Dallas has joined Sporlan Valve Co.'s field sales organization, it was announced by the company.

Watts studied engineering at Purdue and has extensive practical experience in air conditioning and refrigeration, having worked for a large installation firm in Dallas as control engineer.

For the present, Watts will work with J. J. Mays out of Sporlan's Dallas office in order to expand coverage in the Texas, Oklahoma, Arkansas, and Louisiana area.



F. B. Watts



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PA 400 has the highest capacity for moisture adsorption under the most adverse conditions in refrigerator operation . . . higher than any other desiccant. This reserve capacity is a safety factor. PA 400 keeps the refrigerator running even though there is sufficient moisture in the system to completely "saturate" other desiccants.

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**Get Yourself a Lawyer**

# Competent Legal Advice Is Valuable from The Moment You Decide To Go Into Business

E. LANSING, Mich.—Even a small firm can use the services of a good lawyer, Prof. Robert T. Kendall of Michigan State university declared recently.

Speaking at a conference on forced warm air sponsored jointly by the University and the National Warm Air Heating and Air Conditioning Association, Kendall noted that the advice of a lawyer is valuable from the moment you decide to go into business.

## ADVICE ON FORMING BUSINESS

"He can help you choose the best type of organization, whether company, partnership, or corporation," Prof. Kendall explained. "He can help you answer these questions, which will be of utmost importance to any type of business:

- "1. How simple or formal should the organization be?
- "2. Do you want to share control of the business? If so, how much should you retain?
- "3. What should be your personal liability?
- "4. How permanent do you expect your organization to be?
- "5. What will be the effect of the type of organization you choose on the tax situation?"

## LEGAL HELP AFTER FIRM IS ORGANIZED

After organization, Prof. Kendall continued, a lawyer can advise you on the laws affecting your business on licenses required, and on taxes. He can point out alternative actions you

can take as various problems come up, so that you can pick the one most feasible for your business.

He can advise you on situations in advertising, prepare your contract forms, and draft booklets of legal instructions for your employees.

He can help you stay out of lawsuits and, if you do get involved in one, defend your interests.

"Don't be afraid to educate your attorney on all aspects of your business," Prof. Kendall advised. "Tell him all about your business and he may be able to save you from future embarrassments."

## DON'T BE AFRAID TO DISCUSS FEES WITH LAWYER

What is a lawyer's fee based on?

Some communities, Prof. Kendall said, have schedules of fees for different types of services. These are not binding on individual lawyers but they are followed in most cases.

Most attorneys charge by the hour. Locally, he said, this charge runs from \$10 to \$25 per hour. But this varies in different localities.

"Don't be afraid to ask a lawyer how much he thinks he will charge you," he commented. "And don't be afraid to ask for an itemized account after you get your bill."

Prof. Kendall suggested that the retainer system has some

definite values to the businessman who can afford to use it. This system operates like a service contract, whereby the lawyer is paid a specified minimum amount each year for services when needed.

## ADVANTAGE OF RETAINER FEE SYSTEM

When a lawyer is paid a retainer fee, he noted, he is indebted to you and you have a right to first call on his services whenever you want them. And when you need a lawyer in a hurry, you have one on call. You can get service when you want it and not when he can get around to giving service to you.

## PICKING A GOOD LAWYER

How do you go about getting a good lawyer?

Prof. Kendall suggests that a good way is to find out who is the lawyer for your local bank. You can be pretty sure that he is a good man.

Other people in your field can also steer you to lawyers who specialize in your type of business. A lawyer who has a number of clients in your field is bound to have a better understanding of your needs and problems than one who is completely unfamiliar with it, he noted.

## Petroleum Heat & Power Appointed Distributor

STAMFORD, Conn.—The Petroleum Heat & Power Co., Inc. will act as wholesale distributor for Worthington Corp.'s line of air conditioning and refrigeration products, K. G. MacCart, president, announced recently.

First established in 1903, the company now operates seven major sales branches and will represent the sale of Worthington products in Long Island and Westchester, N. Y., and Fairfield county, Conn.

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ENGINEERS AND MANUFACTURERS OF REFRIGERATION AND ENVIRONMENTAL TEST EQUIPMENT

## Top Nebraska Court Rules Public Auction Law Unconstitutional

LINCOLN, Neb.—The Nebraska Public Auction law, passed by the 1955 Legislature to curb itinerant auction sales of major appliances, has been held unconstitutional by the State Supreme Court.

The court decision read, in part:

"The Nebraska Public Auction law makes arbitrary and unreasonable classification because it limits the right to conduct auction sales of new merchandise as therein defined to less than all who are similarly situated without distinctive circumstances which reasonably justify such limitation."

The act required a person holding an auction of new merchandise to be licensed and pay a \$50 fee each day of the auction unless he had an established place of business in the community where the auction was held.

He was also required to furnish a surety bond of twice the value of the goods to be sold, and to list items and amounts of sales after each auction. He further had to show a receipt indicating that personal property taxes had been paid on the merchandise to be offered for sale.

Penalty for violating the act was set at a \$200 to \$1,000 fine,

or confinement in the county jail for 30 to 180 days.

The law was enacted at the request of small town appliance dealers. They claimed that "fly-by-night" auction sales were depriving them of their rightful business. They also produced evidence that the public had been bilked by some of the itinerant auctioneers, some of whom came from out of state and even from as far away as Chicago.

The Supreme Court said the legislature may make a reasonable classification of persons, corporations, and property for purposes of legislation concerning them, but it added:

"The classification must rest upon real differences of situation and circumstances surrounding the members of the class."

In commenting on the various provisions of the act, the high court pointed out that "a person of good character and reputation . . . who does not have an established place of business as characterized in the law cannot conduct an auction of merchandise without complying with the requirements and impositions thereof."

"However, any person, without regard to his defaults, irresponsibilities, irregularities, and disregard of duties and obligations, who has an established place of business may conduct a continuous auction sale of any merchandise he has or which he procures, . . ." it was further stated.

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## Refrigeration Problems And Their Solution

By Paul Reed

For Service and Installation Engineers



### Comparison of Refrigerants 12&22

(Continued)

#### SLUDGES, TARS, GUMS, AND ACIDS

We previously mentioned oil decomposition and formation of acids, so let us compare 12 and 22 in these respects. Since the widespread use of 22, we have been hearing more and more about oil decomposition, sludges, and "varnishes" in the system. Is it because 22 reacts with oil more than 12?

Apparently not. Elsey and Flowers of Westinghouse conducted quite a series of tests to enable them to select suitable oils for 12 and 22. Their conclusions can be summed up somewhat as follows:

When hot compressed 12 gas, bearing some oil, passes from the cylinder through the discharge valve, it is further heated, even above the discharge temperatures shown in Table 11.

The metals in the system, particularly the iron and steel of the valve, act as catalysts, and at these high temperatures the refrigerant breaks down. Some of the chlorine and

fluorine atoms leave the refrigerant and combine with the hydrogen atoms from the oil to form hydrochloric and hydrofluoric acids, leaving only carbon atoms in the oil molecule.

These carbon atoms then exist as a black, heavy sludge, some of which forms a hard coating on the discharge valve, and some passes on throughout the system, stopping up capillaries, oil passages, etc., and darkening the crankcase oil.

Meanwhile, the hydrochloric and hydrofluoric acids attack the metals, gaskets, and motor insulation in hermetic units. However, and this is an important point, the acids do not attack anything unless they are diluted with water, so the presence of water in the system, is necessary to damage the system by acid.

However, Elsey and Flowers found that in the case of 22 there was little reaction with

TABLE 11—Permissible Evaporating and Condensing Temperatures Based on Maximum Discharge Temperature of 275° F.; and Except for Standard Ton Conditions, Based on Suction Gas Superheated to 65° F.

Condensing Temperature	Evaporating Temperature	12		22	
		Disch. Temp. °F.	Comp. Ratio	Disch. Temp. °F.	Comp. Ratio
86° F.	5° F. (Std. Ton)	100	4.07	131	4.06
90° F.	40° F.	122	2.2	146	2.2
90° F.	0	171	4.8	213	4.8
90° F.	-40	231	12.3	292	12.1
110° F.	40° F.	146	2.9	170	2.9
110° F.	0	192	6.3	242	6.3
110° F.	-16	221	9.0	275	8.9
110° F.	-40	261	16.2	330	15.9
140° F.	40° F.	178	4.3		
140° F.	0	232	9.2		
140° F.	-29	275	17.9		
140° F.	-40	294	23.7		

the oil, so they concluded that 12 requires a higher grade, more highly refined oil than 22. However, they noticed more tendency toward copper-plating with 22 than with 12, so it seems probable that oil used with 22

should also be a highly refined oil.

In this connection it might be well to mention that Dr. Steinle of Germany states that the type of oil used is the principal factor in causing copper-plating in halogenated hydrocarbon systems, and that copper-plating can occur with no moisture present.

The experiments by Elsey and Flowers were carried on with dry refrigerants and moisture-free oil. Dr. Steinle has also investigated oils, and his conclusions closely parallel those of Elsey and Flowers.

#### 22 AND HERMETIC MOTOR INSULATION

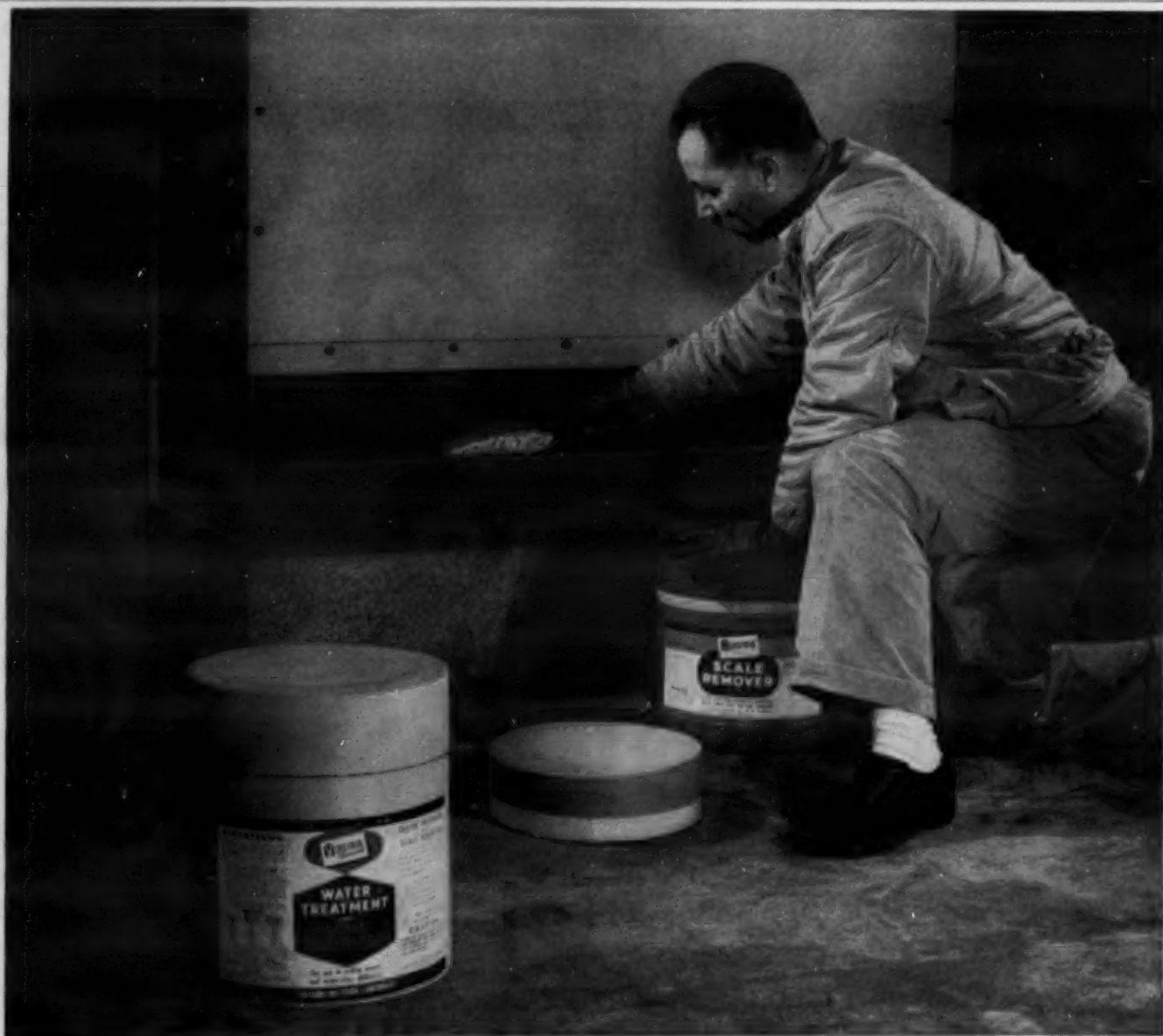
Although there is less reaction between 22 and oil than between 12 and oil, the opposite is true in respect to motor insulation, particularly slot insulations which are usually paper or fiber, both of which are basically cellulose. Elsey and Flowers found that 22 attacks these insulations several times as actively as 12 does.

Excessive heat and the oil-22 mixture tend to break down these insulations, and the "varnishes," tars, and similar substances are carried over into the system, where they are deposited on the inner surfaces of the condenser, liquid line, and capillary tubes. Also formed are hydrochloric and hydrofluoric acids, carbon, and water.

Not too much is known about these varnish-like gums. We do not know exactly what they are composed of, nor do we know of a solvent that may be used in the field to wash them out of condensers, capillary tubes, etc. The reactions appear to be very complex and to vary considerably as to various materials in the system, and as to conditions.

Nevertheless, 22 is at a marked disadvantage as far as chemical changes are concerned, because of its higher solvent quality, and because of its very high discharge temperatures, and frequently because of its higher compressor body temperature.

(Continued on next page)



### "Virginia's" new scale remover & scale inhibitor restore and maintain maximum heat transfer

Heat transfer efficiencies in water-cooled equipment can be maintained:

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These "Virginia" products are designed for corrective and preventive maintenance:

- "Virginia" Scale Remover (solid), a dry granular acid—safe to handle, and inhibited to protect expensive equipment without reducing its scale dissolving properties. It is an effective algicide. Packed in 10- and 50-pound drums. For use when water hardness is less than 200 p.p.m.

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## Refrigerants --

(Continued from preceding page) peratures. The chemical reactions are said to be perceptible as low as 212° F., and become worse as discharge and compressor "hot-spot" temperatures increase.

It is therefore necessary to keep discharge temperatures of 22 down, and this can be done only by keeping head pressures low, ventilating the compressor well, avoiding low evaporator temperatures with air-cooled units, and operating with low superheats of the suction gas in the unit.

### EFFECT OF 22 ON WIRE INSULATION

Today, some 85% of the small units are the hermetic type, in which the motor and compressor are both in the same case, and the motor windings are exposed to the refrigerant. We are therefore quite naturally interested in any possible effect that the refrigerant may have on the insulation used in the motor windings.

Nearly all hermetic motors are wound with wire insulated with vinyl acetate under the trade names Formex and Formvar, which are practically identical. This insulation is not affected by 12, but it is softened by 22, to the point where it can be scraped off with the thumbnail.

This may not appear to mean too much, as the windings are

not subjected to mechanical abrasion, but due to expansion and contraction with heat, especially during the starting period of the motor, there may be some movement of the coils in the stators, particularly of the ends of the coils in the larger motors, and this might result in damage to the softened insulation.

One motor manufacturer bakes his stators wound with Formvar, for one hour at 275° to 290°. This has the effect of hardening the insulation against softening by 22, and against attack by hydrochloric acid, for Formex and Formvar are attacked by this acid.

Another motor manufacturer reports that they have found Formvar insulation blistered in 22 equipment that has stood idle several months; such as air conditioning installations. They have noticed this especially in horizontal motor-compressors in which the motor windings are partially submerged in the oil-22 mixture. There is an extra-heavy Formvar coated wire available, but it does not entirely eliminate this trouble.

Nylon and some experimental material, including Teflon, as insulating material for wire, is not softened by 22, but at present they are too expensive for this purpose. This subject is covered in considerable detail in a paper by Dr. Eiseman of Kinetic.

The resistivity of the wire insulation is lowered by 22, so that in general, 22 is not as

good electrically as 12, but is apparently satisfactory, for 12 sets a rather high standard electrically.

The field seems to have experienced more burned-out motors on 22 systems, including hermetic systems, than on 12 systems. Apparently this was originally caused less by any inherent weakness of the wire insulation to attack by 22, than by overheating the motors, or by overheating the motor-compressors from excessive discharge temperatures, poor air circulation, excessive head pressures, and other abnormal operating conditions. It does appear, however, that the slot insulation now used in hermetic motors could be greatly improved.

On the other hand, the acid that may be formed in the system by excessive temperatures, refrigerant and oil breakdown, wet systems, and the use of additives, alcohol, and foreign materials, has contributed a great deal to the motor burn-outs of hermetic motors, particularly on 22 systems.

As proof of this, it is well known that unless a hermetic system is thoroughly cleaned out after a motor burnout or overheating, the replacement compressor will last but a short time, perhaps no more than a few days. The breakdown of the insulation produces water, and large amounts of acid, so that the insulation on the new compressor rapidly deteriorates, and the motor soon burns out.

(To Be Continued)

## Ford Heads Combined Wagner Electric Engineering, Research

ST. LOUIS—Wagner Electric Corp. announces the consolidation of all its electrical and automotive engineering and research facilities under the direction of P. C. Ford, newly-appointed executive engineer.

C. E. Widell was named director of research-development.

P. J. Reese was made assistant director of research and development.

In the Electrical Div., two chief product engineers were named: H. B. Keath, transformers, and A. E. Frohardt, motors.

E. E. Wallace was named chief product engineer, automotive and industrial brake products.

J. T. Hepp was named manager of the Patent, Metallurgical & Chemical Div.

W. R. Freeman has been made consulting engineer.

## E-Z-SEE LIQUID INDICATOR



NEW FLO INDICATOR FLAP SHOWS ALL FLOW CHANGES

Analyze flow, function of expansion valve, by means of E-Z-SEE sensitive flap, instantly responsive to variations in flow. Positively leak-proof — hundreds of thousands in use. Available to Wholesalers everywhere

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## Trane To Build 3 New Bldgs. This Summer Due To Record 1956 Volume

LA CROSSE, Wis.—According to Trane President D. C. Minard, three more building projects have been approved by the company's directors for construction starts now, and during mid and late summer of this year.

The new projects include a 5,040-sq. ft. addition to the Trane Research and Testing Laboratory, a new 45,000-sq. ft. warehouse building, and a 4,800-sq. ft. paint storage building, it was added.

Trane construction activity here this year is already at a record high. This, plus the latest building announcement, totals 241,800 sq. ft. of new manufacturing space and buildings the

company will add to its La Crosse operation by Feb. 1, 1957.

Originally planned for expansion when needed, the laboratory building completed two years ago, has been the scene of a consistently expanding Trane research and testing program, it was pointed out.

The company expects construction to get started on the addition on or about Sept. 1, with completion and occupancy set for the end of the year.

Architects and engineers for the laboratory project are Magney, Tusler & Setter, Minneapolis. Cost has been estimated at over \$200,000 for building and equipment.

Record production volume during the first half of 1956, Trane reported, has brought a sharp increase in the amount of raw materials handled by the company.



## They all Like



## Refrigeration

Above: Orange Juice Concentrating Plants Prefer Frick Heat Pumps and Refrigeration



Freezer with Overhead Coils at Sea-board Fish Co., Baltimore, Maryland



Frozen Fruit Storage, 197 by 195 by 18 ft. High, Held at Minus 10°



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EXTRA experience, EXTRA engineering, and EXTRA economy are built into Frick refrigerating, ice making, quick freezing and air conditioning machinery. Thousands of installations prove it: let us show you the nearest ones, and submit figures on your needs.

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## The MARSH Serviceman TIMER

**115 VOLT, 60 CYCLE MODEL**

For testing smaller units with compressors of 1/2 hp. or less. Operates in series . . . Simply plug equipment into timer; timer into wall outlet.

**230 VOLT, 60 CYCLE MODEL**

For testing larger installations regardless of horsepower. Operates in parallel. Note well shielded alligator clips for attaching to motor terminals and power lines.

**SHOWS:**  
Total running time  
Total elapsed time  
on 24-hour dial

This great addition to the "Serviceman" line does a vital job supremely well. Its white hairline pointer shows total time of test; red pointer shows total running time. It is easier to read, use, and interpret than a recorder . . . has no charts or leaky pens to bother with . . . yet it is very moderately priced.

Two models (opposite) cover all conditions. Note sturdy case finished in attractive hammerloft gray with sharp white numerals on black dial . . . also suction-cup feet for firm placement without damage to finish. This is the instrument you've been waiting for. Write for details, or

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## Servicing Weathertron Heat Pumps

By C. Dale Mericle

Originally just a theory and for many years subject only to occasional experimental installations, the heat pump of late has developed into a practical and expanding business.

It's future was never brighter.

Design, manufacturing, sale, installation, and service of the heat pump have already become important factors in the air conditioning industry, and are bound to grow.

In recognition of the present stage of development, and the expected future, the NEWS is beginning herewith a series of articles on servicing a specific make of heat pump—the General Electric air-to-air "Weathertron."

With any product, service is very often the result of misapplication. Therefore, we think it proper to begin this series with a summation of G-E's recommendations on application before getting down to specific service problems.

### APPLICATION

Function of the G-E Weathertron heat pump is to provide automatic year-round air conditioning including summer cooling and winter heating for the home, office, store, or factory.

Essentially, the same fundamental factors of application which affect air conditioning also apply to the Weathertron.

### Structural Requirements

The structure, for example, must be properly insulated to minimize heat gain in summer and heat loss in winter. This means:

1. Adequate insulation of roofs and ceilings.
2. Proper ventilation of attic areas.
3. Insulation of outside walls.

4. Use of double glazing or storm sash.
5. Insulation for floors over crawl space.

Other application suggestions which G-E makes call for:

1. Standard sizing of bathroom ducts and outlets with provision for resistance panel heating for quick pick-up for bathroom when it is in use.
2. Consideration of lighting and appliance loads in commercial applications, which can normally be ignored in residences.
3. Ventilation may be required in commercial applications, but generally not in homes.
4. Vapor barriers are advisable between the insulation and inside wall surface and in crawl spaces.

Location of a heat pump such as the Weathertron is independent of such factors as chimneys and fuel tanks, neither of which are required.

The Weathertron does, however, require outside air because outside air is the major source of heat for winter operation and serves as the condensing medium for summer cooling. Thus, it is desirable though not absolutely essential that the Weathertron be located above grade in a space adjacent to exposed or outside walls. This minimizes the amount of outside air duct-work.

### Central Location Advised

Best results are obtained when the indoor air distribution ducts are as short as possible. Therefore, a central location of the Weathertron is preferred.

Drainage connection for condensate is required for the Weathertron, but since no water is supplied to the unit and since the drain pan itself is open, it should be safe to make a closed drain connection instead of the usual open drain required of refrigeration machines. Local plumbing codes, however, govern all cases.

The usual considerations of adequate support for the weight of the unit as well as holding vibration and noise transmission to a minimum apply to the Weathertron as they do to other air conditioning equipment.

### Avoid Locating Near Combustion Equipment

G-E strongly advises against locating combustion equipment in a space that also contains a Weathertron, and the use of combustion equipment in conjunction with a Weathertron heat pump "is not condoned" by the manufacturer.

The use of a single Weathertron for more than one zone, like any other conditioner, has its limitations and should not be done unless the loading characteristics are fairly identical in each of the zones. No such limitations exist when a separate Weathertron is employed for each zone, and in large structures this is one method of achieving very satisfactory results.

Part-time zoning whereby, say, the air might be supplied to the living areas of a residence during the day and switched to bedrooms at night is definitely not recommended.

Proper design of the air distribution system is just as important (but no more so) for a heat pump installation as for other types of cooling and heating equipment.

### Room Air Distribution

G-E recommends the following types of room air distribution systems:

1. Low outside wall diffusers

with returns usually low on interior walls.

2. Floor registers on outer perimeter; returns low on interior wall.

3. Ceiling diffusers; returns low on exterior or interior wall.

4. High inside wall registers; returns low on exterior or interior wall.

Not recommended generally is the combination of low inside wall registers and low exterior wall returns.

Mechanical ventilation and exhaust may be advisable for some commercial applications. G-E recommends that ventilation air be introduced through the Weathertron.

For external control of the Weathertron heat pump, room or duct thermostats may be employed.

On both heating and cooling, the room thermostat should hold the interior temperature within 2°. Generally a "dead space" of about 6° between the heating and cooling cycles is desirable to avoid the possibility of the unit first operating on heating and then on cooling unless a major change in indoor temperature results.

When duct thermostats are used, the system should be set up for continuous air circulation.

Control of systems employing more than one Weathertron can be handled in several ways. Because each multiple-unit application is apt to differ in one respect or another, it isn't advisable to generalize here on these hook-ups.

Except for certain commercial applications which can justify the control necessary for a good job of thermostat setback for night and weekend operation, night setback of the thermostat generally offers little cost saving, according to G-E.

"In fact," the company states, "it may very likely increase the operating cost of a system through excessive use of the supplementary heaters."

Similarly, G-E believes it best to let the thermostat control operation of the Weathertron at night during the summer when cooling is required, but recognizes that individual tastes and climatic conditions in various areas can differ considerably on this point.

To achieve most satisfactory conditions of comfort at minimum first and operating costs, selection of a Weathertron heat pump for a particular job cannot be done on any rule-of-thumb basis.

Details of such calculations and equipment selection will not be given here. It would be well to point out, however, that the calculations are based on:

1. An indoor design temperature of 75° F., summer and winter.
2. Winter outside design temperature is the Average Annual Minimum (the point below which the temperature normally falls less than 12 hours per heating season) of the ASHAE Guide.
3. Summer outside design temperature is the Common Use temperature as listed in the ASHAE Guide.

(To Be Continued)

## Stop Algae Growth! Prevent Damage! SPECIAL ALGAE SOLVEX



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- Safely removes slime and other deposits
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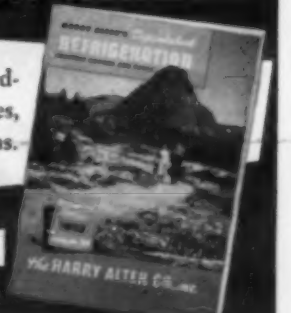
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## Las Vegas RACCA-- Irradiation Prolongs Shelf-Life of Meats; Safety Is Problem

(Concluded from Page 1, Col. 5)

shall revert to the owner and not the general contractor. Ralph Jefferson, secretary-treasurer of the Las Vegas group, said that one member—Mr. Ellsworth—stated that he would assist in bringing the resolution to the attention of the other contractor groups with the request that their officers join with RACCA of Clark County in becoming signatories to the resolution.

Text of the resolution is as follows:

"Whereas, it is the desire of the contractor members of the undersigned organizations to perform quality work at fair prices and thereby to merit and build public confidence, and

"Whereas, this problem has been recognized at the Government level by the passage of Senate Bill 1644 by the United States Senate, which bill requires general contractors to name in their bids for government contracts the subcontracting firms which they intend to use, permits them to change subcontractors only with government approval and requires them to pass along any savings effected by such change to the government rather than to the general contractor.

"Now be it resolved, that the architects of Clark County be hereby urged to require each general contractor to submit with each bid, or in addition to each bid, a list of the bona fide, legitimate subcontractors in connection with such bids, and

"Be it further resolved, that the said architects of Clark County also be urged to require that once a bid has been let, if subsequent negotiations result in a saving of money, said saving shall not revert to the general contractor but shall revert to the owner."

## Department Stores Report Sales Up 9% above '55 Week; Air Conditioners Lead Rise

NEW YORK CITY—Department store shoppers continued their free spending here recently, according to the Federal Reserve Bank of New York.

Sales of the nine major stores which report weekly to the bank were up 9% from the same week last year.

Largest sales gains were in departments selling air conditioners, fans, and other cooling equipment, most spokesmen agreed.

DENVER—Shelf life of meat packaged and pasteurized by irradiation has been prolonged three weeks to two months, Walter S. Shafer, vice president of Armour & Co., Chicago, told Denver Chamber of Commerce members here recently.

However, when or if irradiated food will be put on the market is still a question, Shafer stated.

"It may possibly take a year or longer" before the Food and Drug Administration will rule on "whether irradiated food products are safe for human consumption," he continued.

This is because not enough information either on animal feeding or human volunteer feeding of radiation pasteurized food products has been available to permit the FDA to approve the process for general use, Shafer explained.

Big problem in using nuclear radiation is that of safety of employees and safety of the reactor 24 hours a day, since it can not be turned off when the day's production is completed.

"Closer to reality is the electrical energy type of radiation equipment such as Van de Graaff and other types of linear accelerators," he continued. "These require the same safety features, but when the day's work is completed the plant can be shut down and hence is not hazardous for the remainder of the time. This ability to turn the radiation source on and off also permits easier access to the equipment, its cleaning, and maintenance."

## Sunbeam Executive, Dies; Company Policy Saves Others

CHICAGO—A vice president of Sunbeam Corp. and a member of the advertising department of the firm were among the 128 persons killed in the two-airplane crash in Arizona.

Listed among the dead were A. E. Widdifield, 50, Sunbeam vice president in charge of advertising, and James K. Hadfield, 24, of the advertising staff.

A Sunbeam company policy which permits not more than two officials to fly in the same airplane saved the lives of nine executives of the company who had taken other flights.

## American To Open 35-40 Frigidaire Names Menge-- New Stores by Sept. 30; 60-70 Due In Fiscal Yr.

PHILADELPHIA—American Stores Co., which has opened nine new supermarkets since March 31, expects to have a total of 35 to 40 new stores operating before Sept. 30, shareholders were advised at the recent annual meeting.

Paul J. Cupp, president, told stockholders that "Acme" is committed to 94 other locations, 89 of which are on the drawing boards or in some stage of development, the remaining five awaiting development.

During the current fiscal year, he said, from 60 to 70 new stores would be opened.

Reiterating the chain's plans to reach \$800 million volume in this fiscal year, the executive stated sales for the year ending March 31 were up 4.8%. April volume was about 13.2% ahead of last year, with May figures 17.7% higher than those for 1955.

"Refrigerated convenience foods," Cupp noted, "are becoming a continuously more important part of the sales total. Some in the industry feel," he went on, "that these eventually will account for between 10 and 12% of gross sales. Acme is placing greater emphasis on such foods."

## Evans Engineering Announces Promotions

BIRMINGHAM, Ala.—F. J. Evans, president and board chairman of the F. J. Evans Engineering Co. here, which represents Surface Combustion Corp. in several southern territories, has announced a number of promotions.

J. K. Hawk, Birmingham office, has been elected a director and vice president in charge of engineering, and N. B. Buehrer, Birmingham office, was elected to the recently-created position of executive vice president.

Also D. M. Mills, Houston office, was elected vice president in charge of the Houston Div., and Jack J. Tyson, Atlanta office, elected vice president in charge of the Atlanta Div.

(Concluded from Page 1, Col. 2)

plumbing fixtures, steel kitchen cabinets, sink combinations, and gas and electric ranges. No newcomer to the appliance business, Menge had been instrumental in developing the Murray name a wide line of first automatic washer.

## THERE IS A BROWNING ICE STORAGE BIN FOR EVERY MODEL AUTOMATIC ICE MACHINE



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CLB-4 MODEL



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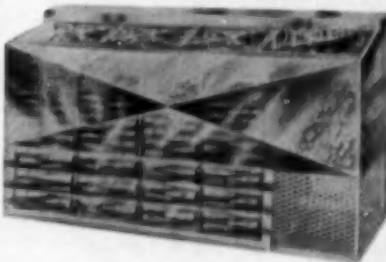
The man we seek will serve as assistant to the national service manager of an established, aggressive Midwestern manufacturer of air conditioning and refrigeration equipment.

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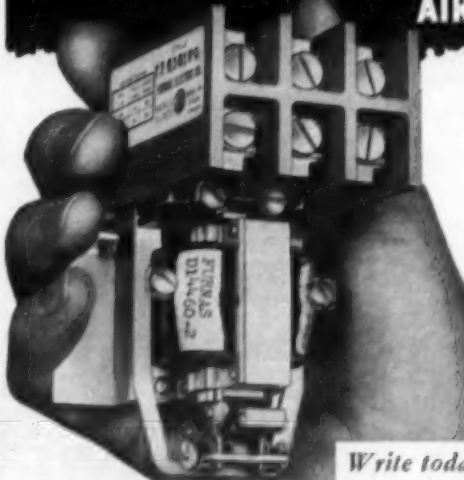
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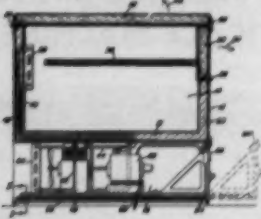
DEAN PRODUCTS, INC. 1042 Dean St. STerling 9-5400 Brooklyn 38, N.Y.



# PATENTS

Week of February 14  
(Concluded)

**2,734,351. PORTABLE REFRIGERATOR.** William L. Stewart, Fitchburg, Mass. Application Sept. 26, 1952, Serial No. 311,610. 1 Claim. (Cl. 62-116.)

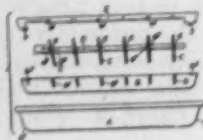


A refrigerator unit comprising a cooling chamber, said chamber including an insulated bottom, insulated back and end walls fixed to said bottom, a lower insulated front wall section secured to said bottom and said end walls, an upper insulated front wall section hingedly mounted on said lower front wall section, an insulated lid hingedly mounted on said back wall, latching means attaching said lid to said upper front wall section to retain said upper front wall section in closed relation, an evaporating element mounted in said chamber, a combination compressing condensing unit outside of said chamber, said compressing and condensing unit being movable with respect to said chamber, flexible conduits connecting said compressing and condensing unit to said evaporating element, a drawer compartment disposed under said cooling chamber, a drawer slidably received in said compartment, said compressing and condensing unit being mounted in said drawer.

**2,734,350. ICE TRAYS AND GRIDS.** Sydney Daniel Budd, Wood Green, London, England, assignor to The Stowacca Fibre & Can Co. Ltd., Manchester, England, a body corporate of Great Britain. Application Feb. 14, 1955, Serial No. 467,547. Claims priority, application Great Britain. Feb. 23, 1954.

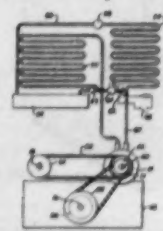
1. An ice tray for a domestic refrigerator comprising the combination with the tray of a centrally arranged

longitudinal partition, the said partition having a plurality of slots extending downwards from its top edge and spaced at equal distances apart, each succeeding slot being more inclined to the vertical than the preced-



ing slot, a plurality of transverse members equal in number to the slots in the longitudinal partition each transverse member having a slot midway between its ends extending upwards from its lower edge whereby the transverse partitions can be assembled with the longitudinal partition, each transverse member also having a second slot above the first slot, a bar slidably mounted on the top of the longitudinal partition, the said bar having a plurality of recesses on its upper edge, the said recesses being equal in number to and at the same distances apart as the slots in the longitudinal partition, one end of each recess being inclined, and the inclined end of each recess being progressively further from the other end thereof, the said bar passing through the upper slots in transverse partition whereby as the bar is moved the transverse partition will be progressively raised from the floor of the tray and means for moving the bar longitudinally along the top of the longitudinal partition.

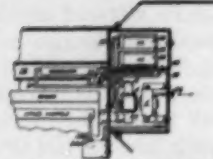
**2,734,352. VEHICLE REFRIGERATING APPARATUS.** John Dolan, Davisburg, Mich., assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware.



5. In combination, an engine having a first relatively high speed drive shaft and a second relatively low speed drive shaft operated simultaneously with said high speed drive shaft at all times, a driven device, first power

transmitting means between said first drive shaft and said driven device including a speed responsive clutch constructed and arranged to disengage said first power transmitting means at relatively high engine speeds, and second power transmitting means between said second drive shaft and said driven device including an overrunning clutch arranged to allow said driven device to be operated by said first power transmitting means at relatively low engine speeds.

**2,734,353. REFRIGERATING DEVICE FOR AUTOMOBILES.** Francis A. Hill 2nd, Westport, Conn.



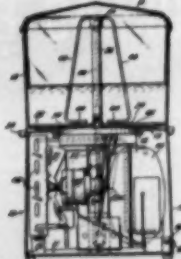
1. A cooling and refrigeration apparatus comprising a casing, a pair of compressors mounted one on each side of said casing and having intake and discharge ports, a piston and piston rod interconnecting the said compressors, teeth on each side of said rod, gears on each side of said rod engaging said teeth, a shaft for each of said gears and rigidly attached thereto, bearings and stuffing boxes for each of said shafts, two vacuum motors one driving one shaft and the other driving the other shaft, said motors having their intake ports connected to the atmosphere and their discharge ports connected to an intake side of an internal combustion engine, and control means to stop and start said motors.

**2,734,354. REFRIGERATOR GAS LIQUIFICATION DEVICE.** Jacob Willem Laurens Kohler, Eindhoven, Netherlands, assignor to Hartford National Bank and Trust Co., Hartford, Conn., as trustee. Application May 1, 1952, Serial No. 285,438. Claims priority, application Netherlands May 25, 1951. 5 Claims. (Cl. 62-122.)



1. A refrigerator comprising a freezer; a regenerator; a cooler; and two spaces containing a working medium of invariable chemical composition which transverse a closed thermodynamic cycle while being in the same physical state through said freezer, regenerator and cooler; one space having a relatively lower temperature than the other space; the working medium in each of said spaces varying continuously in volume with a substantially constant relative phase difference; a gaseous medium surrounding said freezer being adapted to condense at least at -150°C. on the outside wall of said freezer; the gas pressure of the medium to be condensed being substantially equal to atmospheric pressure; an annular collector positioned at the end of said freezer adjacent to said regenerator so that condensed medium may be collected in said collector; said collector being so constructed that the vertical height of the liquid level in said collector does not exceed one third of the height of the wall of said freezer.

**2,734,357. BEVERAGE COOLER AND DISPENSER.** Harry C. Fischer, Columbus, and Louis P. Benna, Gahanna, Ohio, assignors to The Ebeco Mfg. Co., Columbus, Ohio, a corporation of Ohio.



1. In a refrigerated beverage dispenser; a base housing having a partial top wall; refrigeration apparatus carried in said base housing and including a flat disk-shaped cold plate having a flat annular upper surface exposed at the top wall of said base housing and a centrally disposed opening extending through said cold plate, said refrigeration apparatus being operable to circulate a refrigerant through said cold plate to chill the latter; a bearing sleeve extending axially through and carried in the opening of said cold plate; a rotary socket member journaled in said bearing sleeve; motor and drive means in said base housing connected to rotate said socket member; a separate receptacle body to receive a beverage to be dispensed and having a partial bottom wall; a flat annular corrosion-resistant heat exchanger plate carried by the partial bottom wall of said receptacle body and forming a

# Government Contracts

## SYNOPSIS OF PROPOSED PROCUREMENT

### ARMY

**Contracting Officer, Fort Detrick, Frederick, Md.**  
**DISMANTLING AND REMOVAL OF EXISTING METAL COOLING TOWERS AND THE COMPLETE INSTALLATION OF NEW REDWOOD INDUCED DRAFT COOLING TOWERS** to be Erected on the Same Foundations as Those Occupied by the Existing Towers at Fort Detrick, Frederick, Md.. Specifications are available—IFB CML-18-064-56-186B—Bid sets available 25 Jun 56 to 25 Jul 56—Bid Opening 25 Jul 56.

### GENERAL SERVICES ADMINISTRATION

**General Services Administration, Business Service Center, Region 3, 7th & D Sts., S.W., Washington 25, D. C.**  
**1 HP. AIR CONDITIONERS—3 ea.**—IFB FNW-3H-66447-A—Bid Opening 7-24-56.

## CONTRACTS AWARDED THROUGH JULY 2, 1956

**General Services Administration, Region 2, Business Service Center, 350 Hudson St., New York 13, N. Y.**  
**Installation of Air Conditioning in Courtrooms Nos. 1 & 2 at U.S.P.O. & Courthouse, Newark, N. J.**—\$19,545—Master Cooling Corp., 2216 Avenue X, Brooklyn, N. Y.

**Headquarters, Shelby Air Force Depot, Wilkins Air Force Station, Shelby, Ohio.**  
**Air Conditioner, Type MA-3-100 ea.**—\$1,281,832—Spare Parts—1 lot—\$256,366—(PR MH 693223)—57 ea.—\$730,644—Spare Parts—1 lot—\$146,773—(PR MH 718168, 1)—Total \$2,414,971—American Electronics, Inc., American Electric Motors, Inc., 2112 N. Chico Ave., El Monte, Calif.

**District Public Works Office, Eighth Naval District, New Orleans, La.**  
**Install Air Conditioning in the Ground School Bldg., No. 560, Naval Auxiliary Air Station, Cabañas Field, Corpus Christi, Texas.** (IFB NBY-1155)—Job—\$17,989—W. R. Cook Air Conditioning, 642 Omaha Drive, Corpus Christi, Texas.

**Navy Purchasing Office, Washington, D. C., 4th & Independence Ave., S.W., Washington, D. C.**  
**Air conditioning unit, shipboard, Model NR2. (N600(A)42401)** (IFB 600-1603-55). Spec. MIL-A-19144(Aer)—25 ea.—\$110,000—Chase Industrial Refrigerator Equipment & Engineering Co., 630 Reading Rd., Reading (Cincinnati), Ohio.

**General Services Administration, Region 4, Business Service Center, 50 Seventh St., N.E., Atlanta 23, Ga.**  
**Air Conditioning for Court Room, Judge's Suite, etc., U. S. Post Office and Court House, Tallahassee, Fla.**—(IFB CR4-1306-GS-04-B-3826)—Job—\$24,750—B. R. Jones Sheet Metal Works, 118 E. 6th Ave., Tallahassee, Fla.

**QM Purchasing Agency, Columbus General Depot, Columbus 15, Ohio.**  
**Pipe, Air Conditioning, Heating, Stove, Tent.** IFB QM 33-031-56-261 & Amend 1 & 2 (DA 33-031-QM-19347)—496,724 ea.—\$105,702—Inland Steel Products Co., 4101 Burnham St., Milwaukee, Wis.

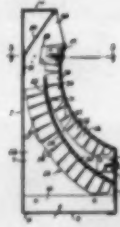
**Purchases Branch, G-4 Section, Fort Bragg, N. C.**  
**Installation of Air Conditioning in Four Chapels, Nos. 1, 16, 21, and 22, Fort Bragg, N. C.** (IFB SS 31-001-56-151)—Job—\$37,385—McLeod Electric Service, Box 486, Lillington, N. C.

**Headquarters, Wright-Patterson Air Force Base, Ohio.**  
**Repair of Cooling Towers, Bldg. Nos. 18, 18F, and 23, Area "B"** (IFB 33-601-56-614)—Job—\$73,249—George W. Timmons, 780 W. Lane Ave., Columbus 21, Ohio.

**Services for complete overhaul of York Corp. Ammonia Compressors Nr. 121024 and 121025.** (AF 33(601)-2247)—Job—\$29,800—York Corp., 2700 Washington Ave., Cleveland 13, Ohio.

flat continuation thereof, said heat exchanger plate being arranged for direct contact with a beverage contained in said receptacle body; an annular disk-shaped contact plate of high heat conductivity metal connected directly with said heat exchanger plate and having a flat annular bottom surface arranged for direct surface-to-surface contact with the flat annular upper surface of said cold plate when said receptacle body is positioned on said base housing; a vertically arranged tube having a lower end portion extending axially through and carried by said heat exchanger plate and said contact plate and terminating in an opening adapted to receive an end of said bearing sleeve, said tube extending vertically upwardly in said receptacle body and terminating at its upper end above the normal level of a beverage within said receptacle body; shaft means journaled in said tube and having a lower end portion arranged to fit within said socket member when said receptacle body is positioned upon said base housing; and a rotary agitator extending downwardly within said receptacle body from the upper end of said tube and connected with said shaft means; said receptacle body, heat exchanger plate, contact plate, tube, shaft means and agitator being removable as a unit from said base housing.

**2,734,445. RECIRCULATING REGISTER.** Nicholas E. Whitney, Michigan City, Ind., assignor to Radiant-Aire Corp., Michigan City, Ind., a corporation of Indiana.

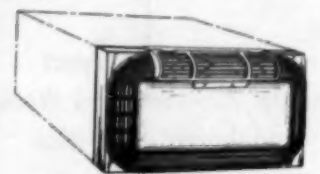


3. A baseboard register designed to be mounted near the baseboard of a wall comprising a housing having an exposed front wall, and rear, side and top walls, the bottom portion of the front wall having an induced air inlet opening for receiving air from the room, said housing having a forced air inlet opening for receiving heated air, said housing having a discharge opening therein at its upper front portion for discharging a mixture of heated air from said forced air inlet opening and room air from said induced air inlet opening, baffle means in said housing extending from a point beneath said induced air inlet opening and between the latter opening and the forced air inlet opening and terminating below said air discharge opening to provide a front induced air passageway extending between said induced air inlet opening and said discharge opening and a rear forced air passageway

extending between said forced air inlet opening and said discharge opening, the spacing between the said baffle means and the front and rear walls, respectively, of the housing gradually decreasing to the top of the baffle means to provide the forced air passageway and the induced air passageway with tapering cross sections reaching a minimum cross section at their juncture.

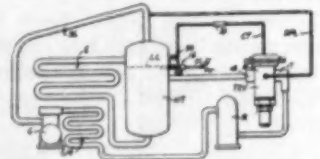
### DESIGNS

**175,808. ROOM COOLER.** Joseph Federico, Buffalo, N. Y., assignor to Carrier Corp., Syracuse, N. Y., a corporation of Delaware.



## Week of February 21

**2,735,572. LIQUID-LEVEL CONTROL DEVICES.** Harold T. Lange, Webster Groves, Mo., assignor to Sporlan Valve Co., Inc., St. Louis, Mo., a corporation of Missouri. Application Aug. 13, 1951, Serial No. 241,641. 7 Claims. (Cl. 62-8.)



1. In a liquid level control assembly, a closed liquid receiver, the liquid level within which is to be controlled in correlation with a pressure condition, a source of liquid supply to the receiver, a suction line adapted to exhaust gas from said receiver, a valve located to control flow between said source and the receiver, a valve motor, valve motor actuating devices including a first device responsive to temperature in the region of desired maximum liquid level in the receiver, heating means in such liquid level region, said heating means being in thermal exchange relation to said first device and to the liquid in said receiver, and being of a low heat output such that adjacency of the liquid thereto will substantially absorb and nullify the heating effect of such heating means, and a second motor actuating device responsive to pressure in said suction line, the valve, valve motor and actuating devices being freely operable at all times in response to differentials in pressures influencing said devices.

(Continued on next page)

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## They Won't Be Home

The companies listed below have notified the NEWS that their plants and/or offices will shut down for vacations during the periods shown in the center columns.

The right hand column indicates whether the plant will continue regular shipments during the shutdown period, emergency shipments only, will ship stock items only, or will make no shipments at all.

When offices will operate with a skeleton staff during plant shutdowns that fact is noted in the "office" column.

This list applies to vacation shutdowns beginning

### Prior to Aug. 1

Plants with later vacation periods will be listed in coming issues of the NEWS. As the names below will not be repeated, we suggest you CLIP and SAVE this list for future reference.

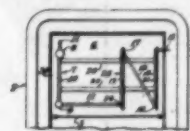
Company	Shutdown Period		Shipments
	Plant	Office	From Plant
Electric Auto-Lite Co.			
Industrial Thermometer Div....	7/7 -7/22		None
C. V. Hill & Co., Inc. ....	7/30-8/12	7/30-8/12	Emergency
Hotpoint Co. ....	7/30-8/15	7/30-8/15	Regular
Imperial Brass Mfg. Co. ....	7/30-8/5	7/30-8/5	Emergency
Kenmore Machine Products, Inc..	7/27-8/5	7/27-8/5	None
Mitchell Mfg. Co. ....	7/30-8/12		Emergency
Primer Sales, Inc. ....	7/27-8/5	7/27-8/5	None
Ranco Inc. ....	7/30-8/5	7/30-8/5	None
Torrington Mfg. Co. ....	7/27-8/12	7/27-8/12	None

Listing of additional plants with vacations starting prior to July 25 appeared on page 34 in the June 25 issue of the NEWS and page 25 of the July 2 issue.

## PATENTS

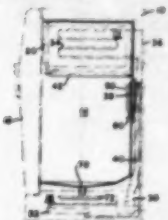
(Continued from preceding page)

**2,735,273. REFRIGERATOR EVAPO-RATOR.** St. J. Williams, Jr., Evansville, Ind., assignor to International Harvester Co., a corporation of New Jersey. Application Dec. 29, 1952, Serial No. 325,450. 2 Claims. (Cl. 62-99.)



1. In a refrigerator, an inner liner disposed within said refrigerator, a horizontally disposed tray mounted in cooperation with said liner to thereby form a freezer compartment positioned within said inner liner above said tray, evaporator means disposed within said compartment comprising three vertically disposed walls, each of said walls formed entirely in a vertical plane, mounting means for mounting said walls in a parallel spaced-apart relation, the first of said walls comprising an upper and a lower header and a plurality of parallel tubes interconnecting said upper and lower headers, the second and third of said walls each comprising a length of serpentine tubing having horizontally disposed straight sections interconnecting by curved sections, said straight sections disposed in a parallel spaced-apart relation, an inlet tube connected to the upper end of said third wall, a connecting tube connected to the lower end of said third wall and the upper end of said second wall, a second length of connecting tubing connected to the lower end of said second wall and to said lower header and an outlet tube connected to the upper surface of said upper header.

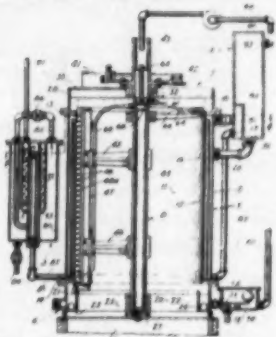
**2,735,274. REFRIGERATING APPARATUS WITH AIR Baffle.** Leonard J. Mann, John M. Murphy, and Varlos G. Sharpe, Dayton, Ohio, assignors to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application July 26, 1952, Serial No. 301,138. 5 Claims. (Cl. 62-103.)



1. In a refrigerator having a food storage compartment and a frozen food compartment, a first evaporator for cooling said frozen food compartment, a second evaporator for cooling said food storage compartment, said frozen food compartment being disposed above said food storage compartment, means for supplying liquid refrigerant to said evaporators, said second evaporator being disposed adjacent the upper rear portion of said food storage compartment, an air directing baffle supported in front of said second evaporator, said baffle having openings provided adjacent its lower edge for the passage of air through the lower portion

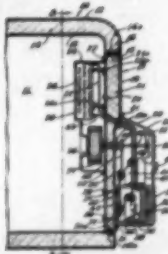
of the baffle, means for directing condensate forming on the upper portion of said baffle above said openings away from the upper edges of said openings, said last named means comprising means for transferring condensate from the front side of the baffle towards the back side of the baffle, and means for directing the condensate from the lower edge of said baffle onto the rear wall of said food storage compartment.

**2,735,275. ICE MAKING MACHINE AND THE ART THEREOF.** Lyle E. Branchflower, Seattle, Wash. Application Feb. 8, 1951, Serial No. 210,030. 7 Claims. (Cl. 62-107.)



1. A flake ice maker and removing device comprising a vertical cylindrical shell member open at the bottom and having an inner surface; refrigerating means refrigerating said inner surface so that water deposited on said surface will form into ice; water supply means depositing water on said inner surface; a driven member coaxially mounted of and in said cylinder; and a plurality of axially spaced apart ice removal blades carried by said driven member, each having an outer ice engaging edge portion disposed generally in a horizontal plane, in close proximity to said inner surface, having the leading portion thereof disposed at a higher elevation than the trailing portion and having a substantially flat and horizontal lower surface portion and an inclined upper surface portion which surfaces join to form an edge, whereby ice forming on said inner surface is removed at a plurality of locations and moves downwardly toward said open bottom of said cylindrical shell.

**2,735,277. COMBINATION PANEL AND REFRIGERATION UNIT.** Adna R. Clark, Evansville, Ind., assignor to International Harvester Co., a corporation of New Jersey. Application June 3, 1954, Serial No. 434,187. 5 Claims. (Cl. 62-117.)



1. In an automotive truck refrigeration unit, the combination, comprising: a thermally insulated wall member hingedly and removably mounted over a cargo-loading and unloading access opening that opens into a cargo-carrying space to be cooled within the truck; air cooling means; air circula-

ing means cooperative with said air cooling means for moving air from the cargo-carrying space to be cooled into heat exchange relation with said air cooling means and thereafter back into the cargo-carrying space to be cooled; said air cooling means and said air circulating means being disposed adjoining the surfaces of said wall member that faces the cargo-carrying space to be cooled; refrigerating apparatus including a compressor, condenser and self-contained compressor driving engine all disposed adjoining a surface of said wall member that is exterior of the cargo-carrying space to be cooled; air moving means disposed adjacent said refrigerating apparatus and operative to move air from the atmosphere outside the cargo-carrying space to be cooled into heat exchange relation with said refrigerating apparatus and thereafter back into the outside atmosphere; said air circulating means and said air moving means being mounted on a common drive shaft and drivingly connected to said driving engine for operation thereby; and having said insulated wall member, said air cooling means, said air circulating means, and said refrigerating apparatus removable as a unitary assembly from the automotive truck.

**2,735,279. REFRIGERATOR EVAPO-RATOR.** St. J. Williams, Jr., Evansville, Ind., assignor to International Harvester Co., a corporation of New Jersey.



1. An evaporator for a refrigerator comprising horizontally disposed shell means for supporting and cooling food placed thereon, tubing means mounted in thermal contact to the underside of said shell means, said tubing means operating to cool said shell means when a cooling agent is conducted therethrough and operating to heat said shell means when a heating agent is conducted therethrough, said shell means comprising strip means operable responsive to the operation of said tubing means when a cooling agent is conducted therethrough to assume a substantially closed flat plane surface, and operable responsive to the operation of said tubing means when a heating agent is conducted therethrough to assume an irregular surface comprising a plurality of parallel spaced apart strips bowed in a generally downward direction along the longitudinal axis of said strips.

**2,735,280. REFRIGERATOR EVAPO-RATOR.** St. J. Williams, Jr., Evansville, Ind., assignor to International Harvester Co., a corporation of New Jersey.



1. An evaporator for a refrigerator comprising a horizontally disposed base portion and a vertically disposed rear wall portion, said rear wall portion comprising an upper and a lower header and a plurality of parallel tubes interconnecting said headers, said base portion comprising a length of serpentine tubing having straight parallel sections interconnecting by curved sections, said straight sections positioned in a horizontal plane including said lower header, said straight sections further positioned perpendicular to the longitudinal axis of said lower header, a plurality of rods mounted in a parallel spaced apart relationship to each other and to the longitudinal axis of said lower header on the upper surface of said serpentine tubing in thermal contact therewith, a pair of diagonal braces, each one of said braces mounted from one end of said rear wall portion to one end of said base portion, a length of capillary tubing connected between one end of said serpentine tubing and said lower header, a second length of capillary tubing connected to the upper surface of the upper header.

## CHIEF REFRIGERATION ENGINEER

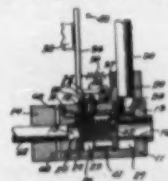
Unusual opportunity for a well grounded man who wants and can take responsibility.

### SALARY OPEN

Location New York City—Our organization knows of this ad. Write in confidence to Box 1000, Radioactive Advts. Agency, 110 West 34 St., N.Y.C.

whereby said second length of capillary tubing serves as an inlet tube for liquid refrigerant, and whereby the other end of said serpentine tubing forms an outlet tube.

**2,735,445. RELIEF VALVE.** William A. Ray, North Hollywood, and Everett W. Rossow, Glendale, Calif., assignors to General Controls Co., Glendale, Calif., a corporation of California. Application April 30, 1951, Serial No. 223,702. 4 Claims. (Cl. 137-620.)



1. In a valve structure for conveying fluid from a pressure source thereof to a motor operable in one direction by the fluid, as well as for controlling discharge of such fluid from the motor to effect operation of the motor in an opposite direction: a casing having a chamber; means forming a partition

dividing said chamber into a first and a second compartment and being movable in opposite directions in response to reversal of fluid pressure difference in the compartments; said casing having a fluid supply passage leading to said first compartment and a motor supply passage leading from said second compartment; means forming a restricted passage continuously interconnecting said first and second compartments whereby fluid from said supply passage can pass to the second compartment; means defining a vent for said second compartment; valve means operated by movement of said partition for controlling flow through said vent, the arrangement being such that when the fluid pressure in said first compartment becomes substantially less than that in the second compartment the resultant movement of the partition effects opening of the vent to permit discharge of fluid from the second compartment; and a pilot valve for so venting said first compartment as to effect said vent-opening movement of the partition.

(To Be Continued)

## CLASSIFIED ADVERTISING

RATES for "Positions Wanted" \$7.50 per insertion. Limit 50 words. 15¢ per word over 50.

RATES for all other classifications \$10.00 per insertion. Limit 50 words. 20¢ per word over 50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other address by actual word count. Please send payment with order.

### POSITIONS WANTED

ATLANTA RESIDENT sales engineer with extensive background in refrigeration and air conditioning. Fifteen years' field experience. Wide acquaintance among manufacturers, wholesalers, contractors, and dealers in eight state Southeast area. Will operate as manufacturer's representative near future. Desire two or three refrigeration and air conditioning or related lines. Financially responsible. Will warehouse product if necessary. BOX A5567, Air Conditioning & Refrigeration News.

### POSITIONS AVAILABLE

ENGINEER TO teach refrigeration and air conditioning in a Technical Institute, Northern New York state. Good salary, paid vacations, excellent retirement plan. Position available immediately. AGRICULTURAL and TECHNICAL INSTITUTE, Canton, New York.

ENGINEER THOROUGHLY experienced in commercial and industrial air conditioning and refrigeration to head engineering department of old established Philadelphia distributor and contractor. Degree required. Excellent salary plus profit sharing plan. Please give details of experience and references. Replies confidential. Contact Ralph Lambert, ELLIOTT-LEWIS CORPORATION, 16th & Hamilton Streets, Philadelphia, Pa.

AIR CONDITIONING expert—Live in sunny Southern California. Permanent employment for man capable of service, start and test and check out of air conditioning systems. Ideal working conditions. Live in Long Beach and work the year around for well established, growing air conditioning firm. Foreman's wages with advancement. Health and accident insurance and vacation fund paid by employer. Write BOX A5566, Air Conditioning & Refrigeration News, stating experience, qualifications and earliest starting date.

OPPORTUNITY FOR an aggressive salesman with practical experience in air conditioning to promote and sell a revolutionary new cooling tower. A valuable future can be created with this quality product competitively priced for volume sales. BOX A5560, Air Conditioning & Refrigeration News.

FACTORY REPRESENTATIVE—established national manufacturer commercial refrigerators and store fixtures require the services of qualified field representatives under 45 years of age to cover New England and Middle Atlantic States. Experience in design and layout of super markets essential plus knowledge and contacts with wholesale and retail sales outlets for refrigerated equipment. Remuneration excellent for man with proper background. Submit complete resume to BOX A5562, Air Conditioning & Refrigeration News. Replies held in strict confidence.

ICE CREAM cabinet salesman under 45 years of age to cover protected eastern territory for national manufacturer of complete quality line of low temperature cabinets. Established sales background with ice cream manufacturer essential. Write complete resume, all replies are held confidential. BOX A5563, Air Conditioning & Refrigeration News.

### EQUIPMENT FOR SALE

SERVICEMEN'S THERMOMETERS: Mercury filled with pocket cases, range -60° to plus 160° F. Mfg. by Taylor and G. M. Price \$10.80 per dozen postpaid. H. L. BOGGESS & SONS, Liberty, Missouri, P. O. Box 137.

NEW SELF contained Kesco automatic condensate water disposal pumps for air conditioners ice cube bins; at your local wholesaler; available in 10 and 20 foot heads.

NEW YORK, Abco Refrigeration, 1615 Second Ave.

MT. VERNON, Eastern Supply, 521 East Third Street

SYRACUSE, Gould-Farmer Co., 1020 W. Genesee Street

WHITE PLAINS, County Seat, 111 Central Ave.

NEWARK, N. J., Tesco Distributors 78 Boston Street

DAYTON, OHIO, W. H. Kieffer Co., Refrigeration Dept.

SACRAMENTO, CALIF., Associated Refrigeration, 1717 Eye Street

SEATTLE, WASH., Refrigerative Supply, 204 W. Republican

DETROIT 4, MICH., Lee Equipment Co., 4721 Joy Road

HIGHLAND PARK, MICH. J. M. Oberc, Inc., 55 Oakman Blvd.

BRIDGEPORT, CONN., Parsons Bros., Inc., 2137 East Washington Ave.

Distributors write to KESCO PRODUCTS CORP., Springfield Gardens 13, N. Y. for sample pump and literature.

INTRODUCTORY OFFER—20 years of proved success, the "Blitzer" thermostatic expansion valve. Brass, adjustable, F12, any temperature application. One year unconditional guarantee. Terms: send credit references or C.O.D. 1/4 ton \$7.50, 1 ton \$7.50. RUE TEN ENTERPRISES, 516 5th Avenue, New York City. Complete satisfaction or money refunded.

### BUSINESS OPPORTUNITIES

OPPORTUNITY IN Florida.—Have dealer franchise for the nation's leading manufacturer of air conditioning and heating equipment. Owner doesn't have the "know how" or background for this type of business. Will sell 100% of corporation stock. Located in Florida's second fastest growing city—possibilities unlimited for man who knows the business. BOX A5569, Air Conditioning & Refrigeration News.

### MISCELLANEOUS

ATTENTION SERVICEMEN: Send for free circulars and bulletins on refrigeration parts and equipment. Real money saving values: WALTER W. STARR, 2633 Lincoln Avenue, Chicago 13, Illinois.

A SALES agency, New York City headquarters, specializing in refrigerated equipment. We cover the Eastern Seaboard, and are seeking another quality product to add to our line. We contact refrigeration dealers, dairies, ice cream companies and supermarket chains. Have complete sales and office staff, also showroom. Our organization is widely known in its field and holds memberships in the various trades we contact. Correspondence in strict confidence. Will visit your plant if your product interests us. BOX A5565, Air Conditioning & Refrigeration News.

WE HAVE been in Dallas since 1939 and travel four states representing manufacturers in the air conditioning and refrigeration parts field, distributing their products through wholesalers and manufacturers of package units. We know the trade intimately and can handle one or two more good lines. BOX A5568, Air Conditioning & Refrigeration News.



## Packaged Units-- Gas-Fired Unit-- Westinghouse--

(Concluded from Page 1, Col. 5) close to 50% ahead of last year, and we're practically out of units except for one or two sizes. We could use 75 or 80 5-ton units right now. And 10's and 15's are very scarce.

"The latter have been going like wildfire since March," he added. "This has been mainly due to the fact that the office market opened up tremendously as compared with last year."

Residential unit sales are about 60% ahead of last year, this distributor also reported, "and we can't get enough coil-condenser units designed for the existing home market."

### 25% Increase In Commercial Units, 50% In Residential

Increases of 25% on commercial units and 50% on residential jobs have been chalked up by another distributor.

"Last summer was good to us," he explained. "That two-month hot spell convinced people of the need. They've been buying much earlier this year."

Popular brands of window units are pretty much sold out, according to some distributors.

### 'Could Sell to 6,000 More Room Units If Available'

"We could sell possibly 5,000 or 6,000 more units if we could get them," said one distributor.

Other distributors of lesser known brands still have fair inventories, but even they note "definitely increased interest in recent weeks," as one firm put it.

When L & P Electric Co., Inc., Fedders distributor, found itself completely out of units, it took a full-page advertisement in the New York Daily News to explain: "We're sold out, but only for the next few days. . . ."

"Because of record breaking sales," body of the advertisement says, "we're very temporarily out of Fedders air conditioners. Even Fedders, the world's largest maker of room air conditioners, could not anticipate this demand. During the past three months, we've more than doubled last year's sales. We're caught short—but not for long. Carloads of Fedders air conditioners are on the way."

Balance of the advertisement urges prospects "to wait for your Fedders" and place orders with Fedders dealers.

The distributor explained that "this year our business started as far back as February. One of our dealers even ran advertising back in December promoting gift certificates."

### Felt Uniformity--

(Concluded from Page 1, Col. 5) since its life is from five days to five weeks depending upon the particular usage, each replacement must have the same identical physical dimensions, property texture, and quality.

Accuracy of control is essential. This is because felt is sold by the pound and when it is weighed out it must have a percentage of moisture not in excess of 12%.

Thus, by maintaining this constant control it is possible to obtain the correct moisture content by merely leaving the felt in the conditioning room for a predetermined length of time.

(Concluded from Page 1, Col. 2) bought out rights of the Ultrasonic Corp. in Cambridge, Mass.

"We have kept heads of gas companies informed on our research and development program," Rheem said. "They in turn have expressed the greatest interest and desire for the utmost cooperation."

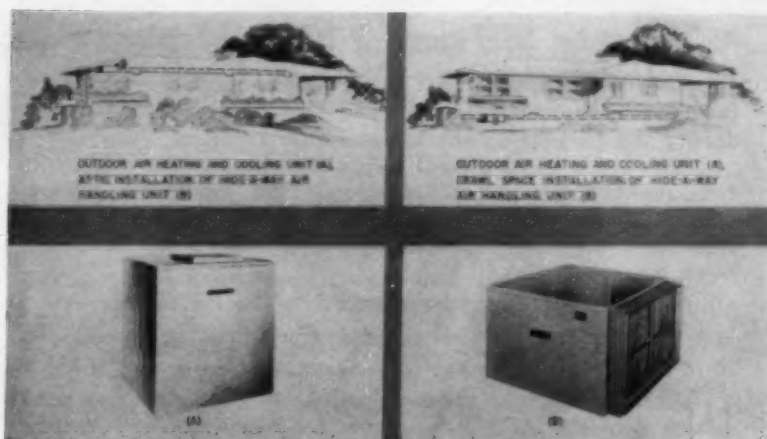
"The basic advantage to the gas industry is that the jet air conditioner we have designed will enable the gas industry to utilize in summer the immense gas backlog which now must be kept in storage, if possible, or else burned off and wasted."

With respect to price, Rheem was quoted as saying "it will be competitive with existing gas-fired heating equipment used in the winter and electric air conditioning units for the summer."

(Concluded from Page 1, Col. 4) is 34 by 33 by 22 in. while the outside compressor-condenser unit is 38 by 36 by 29 in. Called the Hideaway Heat Pump, it contains the same proven operating components which have been standard in thousands of single unit Westinghouse air-to-air heat pumps.

In announcing the remote heat pump, J. A. Gilbreath, manager of the Packaged Product Dept. of the Westinghouse Air Conditioning Div., said that over-all industry sales of the heat pump had not yet reached their potential simply because homes in geographical areas of the country most suited for heat pumps, were predominantly bungalow type residences with no basements.

Preference for the heat pump by thousands of homeowners is



"HIDE-A-WAY Heat Pump," developed by Westinghouse, comes in both 3 and 5-ton sizes with a "4-way valve" for even heating-cooling changeover. "A" above shows outdoor air heating and cooling unit for attic installation, "B" for crawl space installation.

a fact proven by extensive market surveys, it was stated.

"All that was needed," Gilbreath said, "was to make the unit flexible and small for variable location within the home."

The Hideaway Heat Pump in

both 3 and 5-ton sizes includes the Westinghouse "4-way valve"

developed for even heating-cooling changeover. For the first time, low voltage control of the units will be available, it was stated.

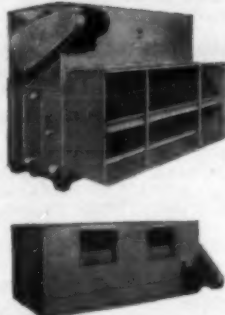
There's no "or Equal" when you select...

**BUSH**

Air Conditioning Units

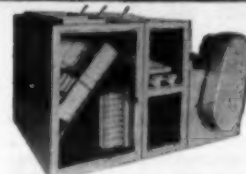
EXCLUSIVE INNER-FIN DESIGN • THE INDUSTRY'S MOST COMPLETE LINE

#### 'AH' AIR HANDLING UNITS



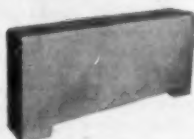
Available in 12 models from 800 CFM to 28,800 CFM. Floor-standing vertical and ceiling-hung horizontal models with direct expansion, water or steam coils. Face and by-pass damper sections, mixing boxes, spray type humidifiers and filter sections available for all units. Models AH-10 to AH-32 available with Inner-Fin coils.

#### 'MZ' MULTIZONE UNITS



Available in 9 sizes covering a range from 2,560 CFM to 28,800 CFM. Multizone Units parallel the standard Bush HAH Air Handling units, using the same proven blower sections and accessories such as filter sections and mixing boxes. Zone dividers may be arranged as desired — vertical, horizontal or a combination of both. Entire interior is well insulated and undercoated. Units can be shipped sectionally when this is desired to facilitate installation.

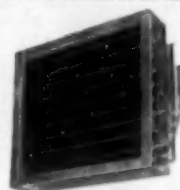
#### 'CR' REMOTE AIR CONDITIONING UNITS



Provide quiet, economical year 'round air conditioning for all types of multi-room buildings. Units are available in vertical floor and horizontal ceiling models . . . feature individual room control . . . are easily incorporated in new or existing buildings.

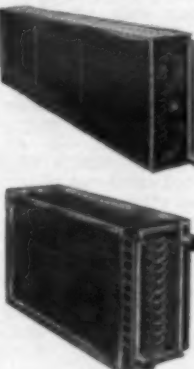
The BUSH line of air conditioning equipment includes units of all types to meet your every requirement. For single-source simplicity, select quality-constructed, advanced design BUSH units. And for capable engineering or specifying assistance, contact your BUSH sales engineer.

#### 'IDX' INNER-FIN AIR CONDITIONING COILS



Available in standard stock sizes 2, 3, 5 and 7½ tons for simplified selection. Inner-Fin construction permits use of smaller size coil for any desired capacity. Shallower depth requires less fan horsepower. Coils completely flanged for easy installation.

#### DX WATER AND STEAM COILS



Bush Water, Steam and DX Coils are supplied in standardized and matched sizes. Singly or in combination, can be arranged to fit practically any installation. Constructed of collar spaced serrated aluminum fins bonded to copper tube, staggered in direction of air flow.

#### 'CC' COMFORT CONDITIONERS



Engineered and constructed for use in the conditioned area. Motors mounted inside casings. Attractive insulated cases, noiseless operation. Available with direct expansion coils of Inner-Fin construction. Where steam coils are desired, inner tubes of DX coil are specially circuited. Water cooling or heating coils also available.

Request Catalogs containing complete specifications on units shown.

**BUSH MANUFACTURING CO.**

WEST HARTFORD 10, CONNECTICUT • RIVERSIDE, CALIFORNIA

